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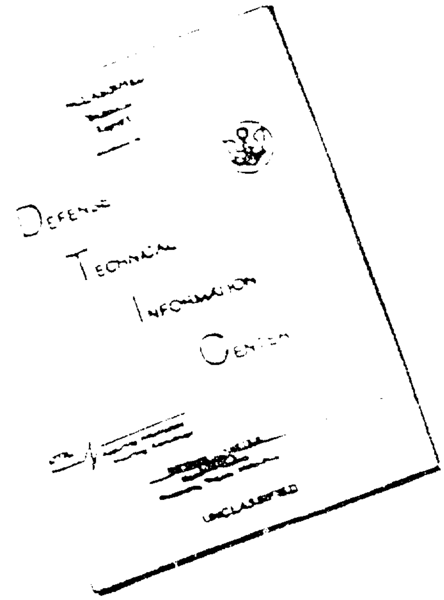
AIR FORCE CAMBRIDGE RESEARCH LABORATORIES
L. G. HANSCOM FIELD, BEDFORD, MASSACHUSETTS

Vertical-Attenuation Model With Eight Surface Meteorological Ranges 2 to 13 Kilometers

LOUIS ELTERMAN

OFFICE OF AEROSPACE RESEARCH
United States Air Force



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OPTICAL PHYSICS LABORATORY PROJECT 7621

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Vertical-Attenuation Model With Eight Surface Meteorological Ranges 2 to 13 Kilometers

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Abstract

An examination of the haze regime shows that : (1) the aerosol properties of a surface meteorological range generally affect a mixing layer to 5 km altitude, and (2) the lower and upper visibility limits of a haze regime are defined by meteorological ranges 1.2 km and 15 km respectively. Within these limits eight meteorological ranges are selected for developing uv, visible, and ir aerosol attenuation coefficients. An aerosol scale height is derived for each meteorological range. Finally, the computed aerosol attenuation coefficients are presented as tabulations, which include previously published attenuation parameters (aerosols, molecules and ozone) to 50 km altitude.

Contents

1. INTRODUCTION 1
2. SPECTRAL METEOROLOGICAL RANGES 4
3. STATEMENT OF OBJECTIVES 6
4. AEROSOL MIXING LAYER 6
5. THE USE AND JUSTIFICATION FOR A SCALE HEIGHT FAMILY 8
6. THE OPTICAL THICKNESS COMPUTATION 10
7. SUMMARY AND CONCLUDING REMARKS 11
8. TABULATIONS 12

ACKNOWLEDGMENTS 54

REFERENCES 55

Illustrations

1. Defined Limits of the Haze Regime 2
2. Wavelength Distributions of the Aerosol Attenuation Coefficient for Several Meteorological Ranges 4
3. An Aerosol Scale Height Family 9
4. Comparison of Optical Thickness and Transmission in the Aerosol Mixing Layer 10

Tables

1.	Meteorological Ranges and Corresponding Parameters	3
2.	Surface Aerosol Attenuation Coefficients Corresponding to Figure 2	5
3.1.	Parameters at 0.27 Microns	14
3.2.	Parameters at 0.28 Microns	16
3.3.	Parameters at 0.30 Microns	18
3.4.	Parameters at 0.32 Microns	20
3.5.	Parameters at 0.34 Microns	22
3.6.	Parameters at 0.36 Microns	24
3.7.	Parameters at 0.38 Microns	26
3.8.	Parameters at 0.40 Microns	28
3.9.	Parameters at 0.45 Microns	30
3.10.	Parameters at 0.50 Microns	32
3.11.	Parameters at 0.55 Microns	34
3.12.	Parameters at 0.60 Microns	36
3.13.	Parameters at 0.65 Microns	38
3.14.	Parameters at 0.70 Microns	40
3.15.	Parameters at 0.80 Microns	42
3.16.	Parameters at 0.90 Microns	44
3.17.	Parameters at 1.06 Microns	46
3.18.	Parameters at 1.26 Microns	48
3.19.	Parameters at 1.67 Microns	50
3.20.	Parameters at 2.17 Microns	52

Symbols

d	Horizontal path length (km)
H_p	Aerosol scale height (km)
h	Altitude (km)
m	Aerosol index of refraction
N_p	Aerosol number density (cm^{-3})
N_o	Constant proportional to total number of particles between r_1 and r_2
N_r	Molecular number density (cm^{-3})
V_η	Meteorological range (km)
r	Particle radius (microns)
T_h	Horizontal transmission
T_{0-h}	Transmission between sea level and altitude h
$T_{h-\infty}$	Transmission between altitude h and space
$T_{\Delta h}$	Transmission between two altitudes above sea level
β_3	Atmospheric ozone absorption coefficient (km^{-1})
β_p	Aerosol attenuation coefficient (km^{-1})
β_r	Rayleigh (molecular) attenuation coefficient (km^{-1})
β_{ext}	Extinction coefficient (km^{-1})
θ	Zenith angle
λ	Wavelength (microns)
σ_p	Aerosol scattering cross section (cm^2)
σ_r	Rayleigh scattering cross section (cm^2)
τ_3	Ozone optical thickness from sea level to altitude h (0-h)
τ_3'	Ozone optical thickness from altitude h to space ($h-\infty$)
τ_p	Aerosol optical thickness from sea level to altitude h (0-h)
τ_p'	Aerosol optical thickness from altitude h to space ($h-\infty$)
τ_r	Rayleigh optical thickness from sea level to altitude h (0-h)
τ_r'	Rayleigh optical thickness from altitude h to space ($h-\infty$)

τ_{ext} Extinction optical thickness (molecular + ozone + aerosol) from sea level to altitude h (0-h)

τ'_{ext} Extinction optical thickness (molecular + ozone + aerosol) from altitude h to infinity (h-∞)

ψ Aerosol size distribution function

Vertical-Attenuation Model With Eight Surface Meteorological Ranges 2 to 13 Kilometers

1. INTRODUCTION

A series of atmospheric attenuation parameters which vary with wavelength and altitude are useful for carrying out a variety of exploratory calculations. Such information can take the form of curves, tabulations, or analytic expressions. It is recognized, however, that limitations exist due to variability of the atmosphere's constituents, expecially the aerosol content of the lower troposhere, which contributes extensively to the optical thickness. For example, in the photopic region, assuming a representative wavelength $\lambda = 0.55\ \mu$ and a meteorological range of 23 km near the surface, the aerosol content in the first 3 km above sea level accounts for about 70 percent of the total optical thickness. If surface conditions are hazy or polluted, the aerosol content accounts for a larger percentage. This suggests that the treatment of atmospheric attenuation can be improved by introducing aerosol parameters related to the easily measured meteorological range, that is, by introducing quantitatively a haze regime which is considered as encompassing a series of meteorological ranges between those associated with normally clear conditions and fog. See Figure 1.

Near the surface and at low altitudes, the aerosol constituent is ubiquitous and highly variable, and an aerosol component is present even for a very clear atmo-

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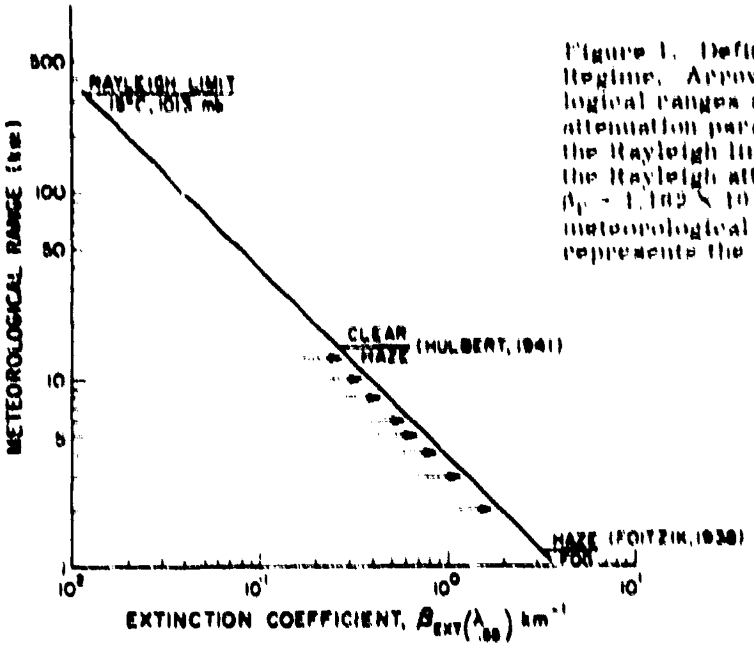

Figure 1. Defined Limits of the Haze Regime. Arrows designate the meteorological ranges selected for developing attenuation parameters. Also shown is the Rayleigh limit which corresponds to the Rayleigh attenuation coefficient, $\beta_r = 1.162 \times 10^{-2}$ km^{-1}, and the related meteorological range 336 km; $\lambda = 0.55\,\mu$ represents the photopic region

spheric condition. Thus, the boundaries of the haze regime (used in the sense of diminished meteorological range) must be defined. The haze limits will be based on the Koschmieder (1924) definition,

$$V_\eta = \frac{3.91}{\beta_{ext}} , \tag{1a}$$

where

$$\beta_{ext} = \beta_p + \beta_r . \tag{1b}$$

V_η is the meteorological range (km) and β_{ext}, β_r, β_p are the extinction, Rayleigh, and aerosol attenuation coefficients (km^{-1}) respectively. Equations (1a) and (1b) apply to sea level conditions and the photopic region represented by $\lambda = 0.55\,\mu$. When converted to a log-log trace (Figure 1), several boundaries can be designated conveniently. The Rayleigh limit, 336 km, is based on the standard atmosphere (15°C, 1013 mb). Foitzik (1938) found that the haze-fog transition is relatively abrupt, and, therefore, can be readily identified; and that $V_\eta \approx 1.2$ km represents the

transition. Foitzik's result is confirmed adequately by Neiburger and Chien (1960), Bullrich (1963), Gloss (1963, 1964) and the analysis by Eldridge (1966).

In contrast, the literature pertaining to a boundary condition between a clear and hazy atmosphere is meager. Since no abrupt changes occur in this region, the requirement is tantamount to dealing quantitatively with psycho-physical observations. Hulburt (1941) correlated meteorological range with atmospheric conditions such as dense fog, light fog, haze, clear, and so forth, using a telescopic photometer, the measurements being made in the vicinity of Washington, D.C. His results led him to propose $V_\eta \approx 15$ km as the haze-clear boundary condition. Despite the subjective element in this result, it provides some guidance. In conjunction with Foitzik's observations, it permits defining the haze regime as $1.2 \leq V_\eta \leq 15$ km. The meteorological ranges and corresponding parameters shown in Figure 1 and Table 1 will be used in the material to follow because they are spaced at convenient

Table 1. Meteorological Ranges and Corresponding Parameters (Representative Photopic Wavelength $\lambda = 0.55\mu$)

V_η (km)	β_{ext} (km^{-1})	β_r (km^{-1})	β_p (km^{-1})	H_p (km)
2	1.955	0.0116	1.943	0.84
3	1.303	0.0116	1.291	0.90
4	0.978	0.0116	0.966	0.95
5	0.782	0.0116	0.770	0.99
6	0.652	0.0116	0.640	1.03
8	0.489	0.0116	0.476	1.10
10	0.391	0.0116	0.379	1.15
13	0.301	0.0116	0.289	1.23

V_η - meteorological range

β_{ext} - extinction coefficient

β_r - Rayleigh attenuation coefficient

β_p - aerosol attenuation coefficient

H_p - aerosol scale height

logarithmic intervals, are adquately separated from the haze-fog transition, and are within the haze regime characterized by diminished meteorological range. The scale height in the last column of the tabulation will be discussed later.

3. SPECTRAL METEOROLOGICAL RANGES

The concept of photopic meteorological range can be widened spectrally if concurrent measurements of attenuation coefficients at other wavelengths are available. The work of Curcio, Knestrick, and Cosden (1961), which is the basis for Figure 2, is an example where $\beta_p(V_4, \lambda)$ was obtained through a series of concurrent measurements. Because of the quantity of data obtained, the results for the meteorological range $V_\eta = 4$ km are considered representative by these authors. A family of distributions, $\beta_p(V_\eta, \lambda)$, can be computed if the $\beta_p(V_4, \lambda)$ values are used in conjunction with Eq. (1) so that

$$\beta_p(V_\eta, \lambda) = \beta_p(V_4, \lambda) \cdot \left[\frac{3.91}{V_\eta} - \beta_r(\lambda_{.55})\right] \Big/ \left[\frac{3.91}{V_4} - \beta_r(\lambda_{.55})\right] , \tag{2}$$

V_η (km) being the photopic ($\lambda = 0.55\mu$) meteorological ranges of interest. Using Eq. (2), the aerosol attenuation coefficient is found for various combinations of meteorological range and wavelength, 0.27 to 2.17μ (Table 2), that is, 160 surface values, $\beta_p(V_\eta, \lambda)$. The shapes of the distributions so determined (Figure 2) conform rigorously to the distribution for $V_\eta = 4$ km, on which they are based.

Because of the functional importance of Eq. (2), it would be in order to examine its implications, especially those related to particle size considerations. If we

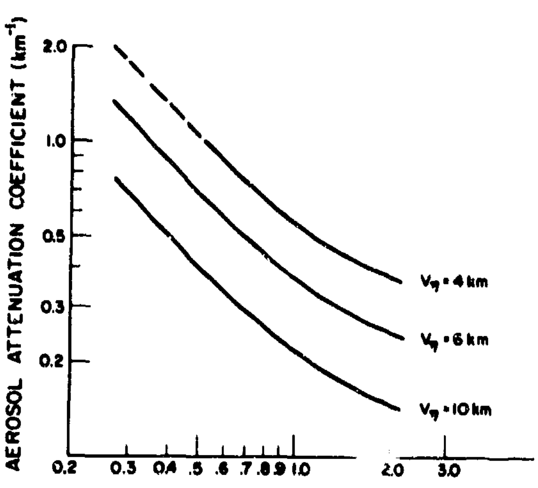

Figure 2. Wavelength Distributions of the Aerosol Attenuation Coefficient for $V_\eta = 6$ km and $V_\eta = 10$ km Derived From $V_\eta = 4$ km Using Eq. (2). The $V_\eta = 4$ km curve is obtained from measurements by Curcio, Knestrick and Cosden (1961), which included the wavelength region $0.40 \le \lambda \le 2.17\mu$. An extrapolation to 0.27μ permits computations for an overall 20 selected wavelengths, $0.27 < \lambda < 2.17\mu$, and 8 meteorological ranges $2 \le V_\eta \le 13$ km. The dash portion of the top curve represents extrapolation

consider a real atmosphere the aerosol sizes within unit volume determine the aerosol attenuation coefficient described by

Table 2. Surface Aerosol Attenuation Coefficients Corresponding to Figure 2

	$\beta_p(h_o, \lambda, V_\eta)$		
λ (μ)	V_4	V_6	V_{10}
0.27	2.00	1.33	7.85×10^{-1}
0.28	1.89	1.25	7.42×10^{-1}
0.30	1.78	1.18	6.98×10^{-1}
0.32	1.67	1.11	6.55×10^{-1}
0.34	1.56	1.03	6.12×10^{-1}
0.36	1.45	9.61×10^{-1}	5.69×10^{-1}
0.38	1.40	9.28×10^{-1}	5.49×10^{-1}
0.40	1.30	8.61×10^{-1}	5.10×10^{-1}
0.45	1.15	7.62×10^{-1}	4.51×10^{-1}
0.50	1.05	6.96×10^{-1}	4.12×10^{-1}
0.55	9.66×10^{-1}	6.40×10^{-1}	3.79×10^{-1}
0.60	8.60×10^{-1}	5.70×10^{-1}	3.37×10^{-1}
0.65	7.80×10^{-1}	5.17×10^{-1}	3.06×10^{-1}
0.70	7.30×10^{-1}	4.84×10^{-1}	2.86×10^{-1}
0.80	6.40×10^{-1}	4.24×10^{-1}	2.51×10^{-1}
0.90	5.80×10^{-1}	3.84×10^{-1}	2.28×10^{-1}
1.06	5.20×10^{-1}	3.45×10^{-1}	2.04×10^{-1}
1.26	4.70×10^{-1}	3.11×10^{-1}	1.84×10^{-1}
1.67	4.00×10^{-1}	2.65×10^{-1}	1.57×10^{-1}
2.17	3.60×10^{-1}	2.39×10^{-1}	1.41×10^{-1}

$$\beta_p(m, \lambda) = \int_{r_1}^{r_2} \sigma_p\,(m,r,\lambda)\; n\,(r)\; dr, \qquad (3)$$

$$n\,(r) = N_o\,(V_\eta)\;\psi\,(r) \qquad (4)$$

and when combined

$$\beta_p(r,\lambda,V_\eta) = N_o\,(V_\eta) \int_{r_1}^{r_2} \sigma_p\;(r,\lambda)\;\psi(r)\;\; dr\;. \qquad (5)$$

In these expressions, β_p is the aerosol attenuation coefficient; the index of refraction is m (to be omitted following Eq. (3) because subsequent considerations will assume m invariable); r_1 and r_2 are the lower and upper radii limits of the size distribution n(r); N_o is a constant proportional to the total number of particles between r_1 and r_2; ψ is the size distribution function (the same for all selected meteorological ranges).

It is implicit in Eq. (5) that β_p and correspondingly the aerosol number density determine the meteorological range (V_η). The integral in Eq. (5) is a wavelength function independent of the meteorological range, which accounts for the conformity in shape of the curves in Figure 2.

3. STATEMENT OF OBJECTIVES

The material thus far has dealt with: (1) the limits of the haze regime (in terms of meteorological range), (2) derivation of spectral aerosol attenuation coefficients ($0.27 \leq \lambda \leq 2.17\mu$) for a series of meteorological ranges, and (3) an examination of the assumptions implicit in the derivation of these coefficients. Now, a statement of objectives can be made. Specifically, aerosol scale heights will be determined for the coefficients in accordance with their meteorological range and their vertical distribution. Then values of the coefficients for km intervals (0-5 km) will be computed. To the coefficients will be added previously published Rayleigh, ozone, and aerosol parameters for altitudes to 50 km (Elterman, 1968) in order to formulate an attenuation model for a haze regime with eight meteorological ranges ($2 \leq V_\eta \leq 13$ km).

4. AEROSOL MIXING LAYER

The procedure for assessing the aerosol attenuation coefficient above the surface can parallel that used for a clear atmosphere (Elterman, 1968), which entails the ap-

plication of a suitable aerosol scale height. As an introduction to scale height considerations, it is noted that, meteorologically, a significant role is assigned to the altitude interval up to several km above the surface. This is a region of strong vertical mixing determined by such factors as heat-transfer across the earth-air interface, advective winds, and consequent turbulence attributable to the region's topography. The resultant vertical flow, mechanical and convective, is characterized, meteorologically, as a mixing depth equivalent to the vertical extent of the mixing layer. When dealing with aerosol attenuation coefficients, aerosol conditions in this layer can be examined in terms of mixing ratios such that for a selected altitude h

$$\frac{\beta_p(h,\lambda)}{\beta_r(h,\lambda)} = \frac{\sigma_p(\lambda)}{\sigma_r(\lambda)} \cdot \frac{N_p(h)}{N_r(h)}, \tag{6}$$

where β_p and β_r are respectively the aerosol and Rayleigh attenuation coefficients (cm^{-1}); and N_p and N_r are respectively the aerosol and molecular number densities (cm^{-3}). The terms σ_p and σ_r, which are respectively the aerosol and Rayleigh cross sections (cm^2), tend to remain constant with altitude (a reasonable assumption). Eq. (6) then asserts that $\beta_p(h,\lambda) / \beta_r(h,\lambda)$, known as the optical mixing ratio, is proportional to the number density mixing ratio $N_p(h) / N_r(h)$. The size distribution for N_p comprises aerosols sufficiently small to be responsive to the usual factors conducive to mixing. Meteorologically, the mixing depth is considered to be 3 km or less, so that an aerosol mixing depth determined from an optical mixing ratio or a number density mixing ratio or even by direct (in-situ) measurement of $N_p(h)$ should be in agreement.

The conclusion, however, based on aerosol measurements sufficient to provide a meaningful average, is that the mixing depth normally extends to a greater altitude. Siedentopf's (1944) sky luminance measurements (18 aircraft flights) show that on the average, the aerosol concentration decreases exponentially with altitude and that the scale height undergoes a significant change between 5 and 6 km. Penndorf's (1954) analysis of solar attenuation observations (8 aircraft flights) shows the scale height change to occur at 4.5 km. An examination of Rosen's (1967) balloon photoelectric countermeasurements, selecting only those profiles where the surface layer is readily discerned (37 profiles obtained on ascent, descent and for 2 wavelengths), shows that the average mixing depth is 5.4 km. An analysis of optical probing measurements (Elterman, Wexler, and Chang, 1969) yielded optical mixing ratios which show that the depth of the surface layer averages 5.3 km (79 profiles at 0.55μ wavelength). Blifford and Renger (1969) completed a series of 22 aerosol collections using an aircraft-mounted impactor. Samples obtained to 9.1 km provide mixing ratios that indicate the mixing depth to be in the range 3-6 km.

Measurement of the atmospheric aerosol distribution has received considerable emphasis in the USSR, for example, in the work of Faraponova (1965), who conducted more than 60 aircraft flights in cloudless weather (solar atmospheric attenuation) to 6.5 km altitude, and in the summary by Kondratiev (1969). In general, the USSR findings are compatible with those previously described.

An overall assessment of the results shows that the aerosol content for the low altitudes is characterized by a mixing depth between 4.5 and 5.5 km. As has been mentioned, it is somewhat higher than the mixing depth of the meteorology discipline. However, the difference is understandable when it is considered that in almost all instances, aerosol measurements were conducted over the continent and with cloudless skies, whereas the mixing layer in the meteorological sense represents less limited conditions. Accordingly, the designation "aerosol mixing layer" will be used, and will be assigned a depth of 5 km (considered representative). Within the aerosol mixing layer, considerable variation and stratification (frequently due to inversions) can occur but, on the average, the particle distribution, $N_p(h)$, and correspondingly the aerosol attenuation coefficient, $\beta_p(h)$, decreases exponentially for the altitude region 0-5 km. The rate of decrease can be expressed as a constant scale height although, as will be shown, not necessarily the same scale height for each meteorological range. At 5 km, effects of mixing are substantially diminished.

5. THE USE AND JUSTIFICATION FOR A SCALE HEIGHT FAMILY

If aerosol conditions at the upper terminus of the aerosol mixing layer are relatively stable compared to those at lower altitudes, as discussed, it suggests that the scale height characterizing the aerosol mixing layer is related to the meteorological range. The existence of such a relationship was examined by means of Figure 3, using $\lambda = 0.55\mu$. Specifically, the scale heights were determined by: (1) utilizing the surface values, $\beta_p(\lambda_{.55}, V_\eta)$, for the meteorological ranges of interest derived from Eq. (2); and (2) taking from published tabulations (Elterman, 1968) at 5 km the aerosol attenuation coefficient, $\beta_p(h_5, \lambda_{.55}) = 5.0 \times 10^{-3} \text{km}^{-1}$. This quantity (assumed representative because the tabulations are based on 79 sets of measurements) is considered relatively independent of the meteorological range for reasons already given. With surface values and the 5 km value established, the aerosol scale height (H_p) was derived for each meteorological range by using

$$\beta_p(h_5, \lambda_{.55}) = \beta_p(h_o, \lambda_{.55})\, e^{-h/H_p} \tag{7}$$

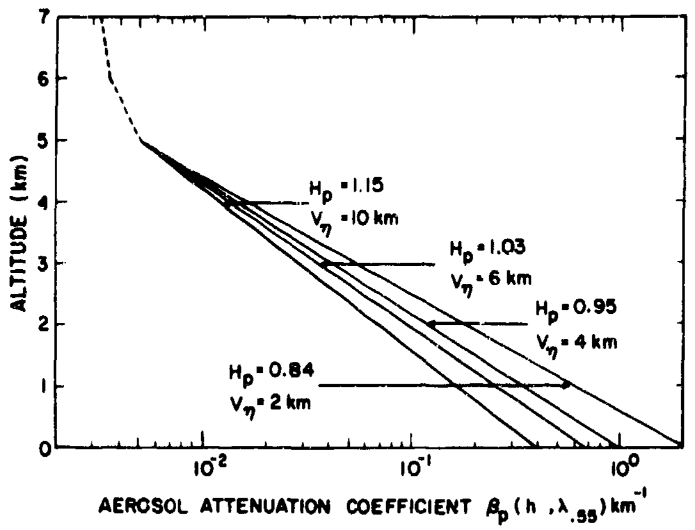

Figure 3. Relationships of Four Aerosol Scale Heights (H_p) With Meteorological Ranges (V_η), Aerosol Attenuation Coefficients (β_p) and Aerosol Mixing Layer Altitudes (0-5 km). The aerosol scale height family was computed using $\lambda = 0.55\mu$. The dash line represents values of $\beta_p(h)$ above 5 km (Elterman, 1968)

It is implicit in this procedure that the derived scale height family is independent of wavelength. With H_p known, the values for $\beta_p(h,\lambda)$ can be calculated (using Eq. (7)) for each km interval up to 5 km (the aerosol mixing layer). To summarize, the decrease of β_p with altitude is represented by a family of scale heights and each scale height depends on the meteorological range of interest (Table 1).

The validity of this procedure depends not only on the value but also on the variability of $\beta_p(h_5, \lambda)$ as it affects the related parameters of interest. In this respect, we note that the aerosol optical thickness up to 5 km, $\tau_p(h_{0-5}, \lambda)$, is an important objective; and also that it is obtained by integration, which makes it sensitive to change of its composite elements, especially at low altitudes. Thus, a suitable evaluation of the aerosol scale height family derived in accordance with Figure 3, is to vary $\beta_p(h_5, \lambda_{.55})$ significantly and to examine the optical thickness and transmission change for the first 5 km and for the several meteorological ranges indicated. This was done by changing $\beta_p(h_5, \lambda_{.55}) = 5.0 \times 10^{-3}\text{km}^{-1}$ by a standard deviation, $\sigma = \pm 3.4 \times 10^{-3}$. For this calculation, as previously mentioned, the mean β_p and σ values at 5 km altitude were obtained from 79 selected optical probing measurements (Elterman, 1968). The resulting aerosol optical thickness and transmission changes are shown in Figure 4. For the eight meteorological

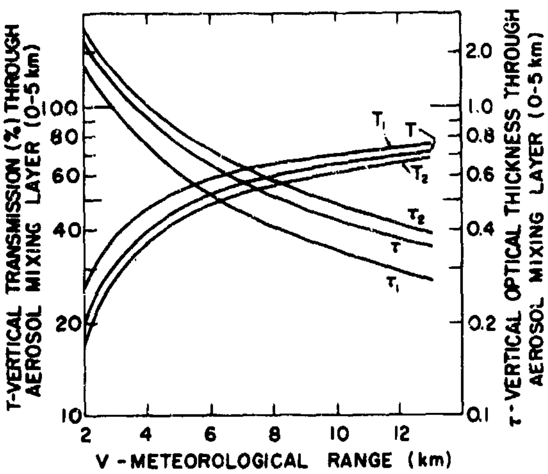

Figure 4. Comparison of Vertical Optical Thickness and Transmission for $\pm\sigma$ (Standard Deviation) and a Mean Aerosol Attenuation Coefficient $\beta_p(h_5, \lambda_{.55})$ at the Top of an Aerosol Mixing Layer Having 5 km Depth. T and τ represent the transmission and optical thickness based on $\beta_p(h_5, \lambda_{.55}) = 5.0 \times 10^{-3} km^{-1}$, the mean of 79 measurements. T_1 and τ_1 represent the transmission and optical thickness based on $\beta_p(h_5, \lambda_{.55}) - \sigma$, where $\sigma = 3.4 \times 10^{-3}$. T_2 and τ_2 represent the transmission and optical thickness based on $\beta_p(h_5, \lambda_{.55}) + \sigma$

ranges, a $+\sigma$ of the aerosol attenuation coefficient corresponds to an average of 3.6 percent change in vertical transmission (attributable to aerosols only). Similarly, a $-\sigma$ corresponds to a 6.4 percent vertical transmission change. The changes are unequal due to exponential relationships. These changes are relatively modest especially when it is considered that the aerosol attenuation coefficients representing the meteorological ranges 2 km to 13 km extend over an order of magnitude. Based on this discussion, it is concluded that for conditions of diminished meteorological range in the aerosol mixing layer, there is sufficient justification for the use of an aerosol scale height family, and that the scale height selected is best determined from the meteorological range of interest.

6. THE OPTICAL THICKNESS COMPUTATION

Since the aerosol attenuation coefficients, $\beta_p(h, \lambda, V_\eta)$, as well as the aerosol scale heights, H_p (constant for each meteorological range) are known, an analytical expression for the aerosol optical thickness, τ_p, was derived as follows:

$$\tau_p(h, \lambda, V_\eta) = \int_0^h \beta_p(h, \lambda, V_\eta)\, dh. \tag{8}$$

For a given wavelength, the aerosol scale height expression applicable to the haze regime depends on the meteorological range and the vertical distribution of the aerosol attenuation coefficient. Accordingly,

$$\beta_p(h,\lambda,V_\eta) = \beta_p(h_o,\lambda,V_\eta)\, e^{-h/H_p(V_\eta)} . \tag{9}$$

Combining Eqs. (8) and (9) and integrating,

$$\tau_p(h,\lambda,V_\eta) = H_p(V_\eta) \cdot \beta_p(h_o,\lambda,V_\eta) - H_p(V_\eta)\left[\beta_p(h_o,\lambda,V_\eta) \cdot e^{-h/H_p(V_\eta)}\right] . \tag{10}$$

Applying Eq. (9) to the bracketed factor in Eq. (10),

$$\tau_p(h,\lambda,V_\eta) = H_p(V_\eta)\,[\beta_p(h_o,\lambda,V_\eta) - \beta_p(h,\lambda,V_\eta)] . \tag{11}$$

Equation (11) was used to compute the aerosol optical thickness for the combinations of wavelength, altitude, and meteorological range required for Figure 4, and the twenty tabulations (surface to 5 km) in Tables 3.1 to 3.20.

7. SUMMARY AND CONCLUDING REMARKS

To formulate an atmospheric attenuation model with meteorological ranges for a haze regime, it was necessary first to define the limits of the haze regime. Following this, eight meteorological ranges were selected within the regime and the surface aerosol attenuation coefficient distribution in wavelength was determined for each meteorological range. From the surface aerosol attenuation coefficients, the $\beta_p(h,\lambda,V_\eta)$ then were computed for km intervals to 5 km altitude (typical depth of the aerosol mixing layer) by applying a scale height derived for each meteorological range. Optical thickness values required for the model were computed with Eq. (11). Finally, parameters from an earlier published attenuation model (Elterman, 1968) were combined with those derived in this paper, in order to provide continuity to 50 km altitude.

The shortest wavelength used in this model is 0.27 microns. The use of shorter wavelengths would required the treatment of O_2 absorption and its attendant uncertainties. The longest wavelength used is 2.17 microns. Calculations for longer wavelengths are complicated by the presence of absorption bands of H_2O, CO_2 and their wings. Also, at longer wavelengths and low altitude haze conditions, absorption by the aerosol itself is an unknown factor. In between, a total of 20 wavelengths is chosen, within the atmospheric windows and for the ultraviolet region where ozone absorption is important (Table 2). If required, a satisfactory interpolation for the optical parameters can be made between wavelengths in the region 0.27 to

about 1μ because light extinction in this spectral region is caused primarily by scattering and ozone absorption and both processes are slowly varying functions of the wavelength. This is true of the extinction coefficients, $\beta_{ext}(\lambda)$, as well as their components, $\beta_p(\lambda)$, $\beta_r(\lambda)$, and generally $\beta_3(\lambda)$.

Beyond 1μ, the computations did not include molecular absorption. Therefore, the tables for wavelengths 1.06, 1.26, 1.67, and 2.17μ represent the IR windows only. The presence of absorption bands due to H_2O and other gases does not permit interpolation between $1.06 \leq \lambda \leq 2.17\mu$, the near IR region considered in this model, unless the interpolation is limited to the Rayleigh and aerosol parameters (no ozone absorption present).

8. TABULATIONS

The tabulations that follow are in computer notation. For example, read 5.96 - 2 = 5.96×10^{-2} and 5.96 2 = 5.96×10^{2}.

The format deals systematically with a multiplicity of variables, thus permitting a variety of exploratory calculations. As an example, the extinction coefficients can be used for exploratory transmission calculations. The atmospheric extinction coefficient is the sum of all the attenuating components:

$$\beta_{ext}(h,\lambda,V_\eta) = \beta_r(h,\lambda) + \beta_3(h,\lambda) + \beta_p(h,\lambda,V_\eta) \,. \qquad (12)$$

For horizontal transmission over a path length (d) at selected altitude, wavelength, and meteorological range

$$T_h(h,\lambda,V_\eta) = \exp\,[-\beta_{ext}(h,\lambda,V_\eta)\cdot d] \,. \qquad (13)$$

For vertical and slant path transmission from sea level to an altitude of interest at zenith angle θ,

$$T_{o\text{-}h}(h,\lambda,V_\eta) = \exp\,[-\tau_{ext}(h,\lambda,V_\eta)\cdot \sec\theta] \,. \qquad (14)$$

For vertical and slant path transmission between two altitudes (h_1 and h_2) above sea level,

$$T_{\Delta h}(h,\lambda,V_\eta) = \exp -[\tau_{ext}(h_2,\lambda,V_\eta) - \tau_{ext}(h_1,\lambda,V_\eta)] \sec\theta. \qquad (15)$$

For a vertical and slant path transmission from a selected altitude out into space,

$$T_{h-\infty}(h,\lambda,V_\eta) = \exp[-\tau'_{ext}(h,\lambda,V_\eta) \sec\theta] . \quad (16)$$

When used individually, Rayleigh, aerosol, and ozone parameters are formulated similarly.

Table 3.1. Parameters at 0.27 Microns

Met. Rge (km) V_n	Alt. (km) h	Rayleigh atten. coeff. (km^{-1}) β_r	Rayleigh optical thick. (0-h) τ_r	Rayleigh optical thick. (h-∞) τ'_r	Aerosol atten. coeff. (km^{-1}) β_p	Aerosol optical thick. (0-h) τ_p	Aerosol optical thick. (h-∞) τ'_p	Ozone absorp. coeff. (km^{-1}) β_3	Ozone optical thick. (0-h) τ_3	Ozone optical thick. (h-∞) τ'_3	Ext. coeff. (km^{-1}) β_{ext}	Ext. optical thick. (0-h) τ_{ext}	Ext. optical thick. (h-∞) τ'_{ext}
2	0	2.282 -1	.000	1.928	6.02 0	.000	3.392	7.68 -1	.390	73.956	5.30 0	.000	76.270
	1	2.071 -1	.217	1.710	1.19 0	2.328	1.064	6.85 -1	.716	73.240	2.08 0	3.261	73.015
	2	1.875 -1	.416	1.513	3.56 -1	3.018	.374	6.15 -1	1.366	69.593	1.16 0	4.798	71.478
	3	1.694 -1	.593	1.335	1.05 -1	3.223	.169	5.25 -1	1.936	69.020	7.99 -1	5.751	73.525
	4	1.576 -1	.753	1.176	3.11 -2	3.283	.109	4.75 -1	2.636	68.520	6.56 -1	6.473	69.835
	5	1.377 -1	.898	1.030	9.21 -3	3.301	.091	4.64 -1	2.305	68.051	6.11 -1	7.105	69.171
	10	7.703 -2	1.422	.505	5.82 -3	3.333	.059	7.35 -1	5.696	65.461	8.28 -1	12.256	66.825
	15	3.678 -2	1.696	.231	4.86 -3	3.360	.032	2.09 0	12.361	57.995	2.13 0	18.918	56.258
	20	1.656 -2	1.822	.106	2.73 -3	3.382	.018	3.64 0	25.765	45.191	3.46 0	33.968	45.538
	25	7.467 -3	1.879	.049	7.62 -4	3.389	.003	3.78 0	65.589	25.367	3.73 0	50.857	25.619
	35	1.577 -3	1.917	.011	6.04 -5	3.392	.000	9.05 -1	66.573	4.576	9.87 -1	71.688	4.588
	50	1.913 -4	1.926	.002	1.10 -6	3.392	.000	3.91 -2	73.337	.825	3.93 -2	76.255	.821
3	0	2.282 -1	.006	1.928	2.67 0	.000	2.440	7.68 -1	.300	73.956	3.65 0	.000	75.326
	1	2.071 -1	.217	1.710	8.60 -1	1.599	.841	6.85 -1	.716	73.240	1.75 0	2.532	72.792
	2	1.875 -1	.416	1.513	2.77 -1	2.113	.327	6.15 -1	1.366	69.593	1.38 0	3.893	71.436
	3	1.694 -1	.593	1.335	8.90 -2	2.278	.161	5.25 -1	1.936	69.023	7.83 -1	4.887	72.516
	4	1.576 -1	.753	1.176	2.86 -2	2.332	.108	4.75 -1	2.636	68.520	6.56 -1	5.521	69.839
	5	1.372 -1	.898	1.030	9.21 -3	2.349	.091	4.64 -1	2.305	68.051	6.11 -1	5.852	59.171
	10	7.703 -2	1.422	.505	5.82 -3	2.381	.059	7.35 -1	5.696	65.461	8.18 -1	9.299	66.825
	15	3.678 -2	1.696	.231	4.86 -3	2.408	.032	2.09 0	12.361	57.995	2.13 0	17.366	58.258
	20	1.656 -2	1.822	.106	2.73 -3	2.429	.019	3.44 0	25.765	45.191	3.46 0	33.866	45.328
	25	7.467 -3	1.879	.049	7.62 -4	2.436	.003	3.78 0	65.589	25.367	3.79 0	49.984	25.619
	35	1.577 -3	1.917	.011	6.04 -5	2.439	.000	9.25 -1	66.380	4.576	9.87 -1	75.736	4.588
	50	1.913 -4	1.926	.002	1.10 -6	2.440	.000	3.91 -2	73.337	.825	3.93 -2	75.395	.821
4	0	2.282 -1	.000	1.928	2.00 0	.000	1.941	7.64 -1	.300	73.956	2.98 0	.000	74.925
	1	2.071 -1	.217	1.710	6.82 -1	1.225	.716	6.85 -1	.716	73.248	1.57 0	2.258	72.667
	2	1.875 -1	.416	1.513	2.32 -1	1.643	.298	6.15 -1	1.366	69.590	1.06 0	3.623	71.482
	3	1.694 -1	.593	1.335	7.93 -2	1.785	.156	5.25 -1	1.936	69.025	7.76 -1	4.384	73.511
	4	1.576 -1	.753	1.176	2.70 -2	1.836	.197	4.75 -1	2.636	68.529	6.56 -1	5.023	69.032
	5	1.377 -1	.898	1.033	9.21 -3	1.850	.091	4.64 -1	2.305	68.051	6.11 -1	5.656	69.171
	10	7.703 -2	1.422	.505	5.82 -3	1.887	.059	7.35 -1	5.696	65.461	8.18 -1	8.866	66.325
	15	3.678 -2	1.696	.231	4.86 -3	1.909	.032	2.39 0	12.361	57.995	2.13 0	15.567	58.258
	20	1.656 -2	1.822	.106	2.73 -3	1.930	.019	3.64 0	25.765	45.191	3.46 0	29.587	45.588
	25	7.467 -3	1.879	.049	7.62 -4	1.938	.003	3.78 0	45.589	25.367	3.71 0	49.486	25.619
	35	1.577 -3	1.917	.011	6.06 -5	1.941	.000	9.35 -1	56.380	4.576	9.87 -1	73.237	4.588
	50	1.913 -4	1.926	.002	1.10 -6	1.941	.000	3.91 -2	73.337	.825	3.93 -2	76.086	.821
5	0	2.282 -1	.000	1.928	1.59 0	.000	1.629	7.68 -1	.309	73.956	2.57 0	.000	76.513
	1	2.071 -1	.217	1.710	5.69 -1	.995	.634	6.85 -1	.716	73.268	1.46 0	1.925	72.586
	2	1.675 -1	.416	1.513	2.03 -1	1.350	.279	6.15 -1	1.396	59.596	1.38 0	3.136	71.382
	3	1.694 -1	.593	1.335	7.24 -2	1.477	.152	5.25 -1	1.936	67.820	7.67 -1	4.005	73.537
	4	1.576 -1	.753	1.176	2.58 -2	1.522	.107	4.75 -1	2.636	68.528	6.59 -1	4.731	69.882
	5	1.372 -1	.898	1.383	9.21 -3	1.538	.091	4.54 -1	2.325	68.051	6.11 -1	5.361	69.171
	10	7.703 -2	1.422	.505	5.82 -3	1.570	.059	7.35 -1	5.696	65.461	8.22 -1	8.408	66.325
	15	3.628 -2	1.696	.231	4.86 -3	1.597	.032	2.39 0	12.361	57.995	2.13 0	16.255	56.258
	20	1.656 -2	1.822	.136	2.73 -3	[illegible]	.018	3.66 0	25.765	45.191	3.46 0	29.235	45.388
	25	7.467 -3	1.879	.049	7.62 -4	1.625	.003	3.78 0	45.589	25.367	3.73 0	49.393	25.619
	35	1.577 -3	1.917	.011	6.04 -5	1.628	.000	9.35 -1	56.380	4.576	9.37 -1	69.925	4.588
	50	1.913 -4	1.926	.002	1.10 -6	1.629	.000	3.91 -2	73.337	.825	3.93 -2	56.492	.821

6	0	2.282 -1	.000	1.926	1.33 0	.000	1.415	7.66 -1	.380	73.956	2.30 0	.000	74.290
	1	2.071 -1	.217	1.710	4.91 -1	.840	.575	6.85 -1	.716	70.240	1.38 0	1.773	72.522
	2	1.875 -1	.414	1.513	1.42 -1	1.151	.264	6.15 -1	1.366	69.593	9.86 -1	2.938	71.368
	3	1.696 -1	.593	1.335	4.72 -2	1.266	.149	5.25 -1	1.736	69.523	7.62 -1	3.795	73.504
	4	1.526 -1	.753	1.176	2.49 -2	1.302	.137	4.75 -1	2.636	68.520	6.52 -1	4.498	69.891
	5	1.372 -1	.898	1.030	9.21 -3	1.324	.091	4.66 -1	2.305	68.051	6.11 -1	5.128	69.171
	10	7.703 -2	1.622	.505	5.82 -3	1.356	.059	7.35 -1	5.696	65.461	8.18 -1	8.276	66.325
	15	3.628 -2	1.696	.231	4.86 -3	1.383	.032	2.09 0	12.361	57.995	2.13 0	16.846	58.258
	20	1.656 -2	1.822	.106	2.73 -3	1.405	.010	3.44 0	25.765	45.191	3.46 0	28.996	45.308
	25	7.467 -3	1.879	.049	7.62 -4	1.412	.003	3.78 0	65.589	25.367	3.79 0	46.886	25.419
	35	1.577 -3	1.917	.011	6.04 -5	1.415	.000	9.35 -1	66.380	4.576	9.87 -1	69.711	4.588
	50	1.913 -4	1.926	.002	1.10 -6	1.415	.000	3.91 -2	73.737	.028	3.93 -2	74.278	.021
8	0	2.282 -1	.000	1.926	9.46 -1	.000	1.136	7.68 -1	.380	73.956	1.96 0	.000	74.529
	1	2.071 -1	.217	1.710	3.87 -1	.440	.495	6.85 -1	.716	73.240	1.28 0	1.596	72.446
	2	1.875 -1	.414	1.513	1.52 -1	.892	.264	6.15 -1	1.366	69.590	9.55 -1	2.672	71.367
	3	1.696 -1	.593	1.335	5.97 -2	.991	.145	5.25 -1	1.336	69.828	7.56 -1	3.529	70.598
	4	1.526 -1	.753	1.176	2.35 -2	1.029	.106	4.75 -1	2.636	68.520	6.54 -1	4.219	69.892
	5	1.372 -1	.898	1.033	9.21 -3	1.045	.091	4.66 -1	2.335	68.051	6.11 -1	4.866	69.171
	10	7.703 -2	1.622	.505	5.82 -3	1.077	.059	7.35 -1	5.696	65.461	8.18 -1	7.995	66.325
	15	3.628 -2	1.696	.231	4.86 -3	1.104	.032	2.09 0	12.361	57.995	2.13 0	15.782	58.258
	20	1.656 -2	1.822	.106	2.73 -3	1.125	.010	3.44 0	25.765	45.191	3.46 0	28.722	45.338
	25	7.467 -3	1.879	.049	7.62 -4	1.132	.003	3.78 0	65.589	25.367	3.79 0	48.600	25.619
	35	1.577 -3	1.917	.011	6.04 -5	1.135	.000	9.35 -1	66.380	4.576	9.87 -1	69.432	4.588
	50	1.913 -4	1.926	.002	1.10 -6	1.136	.000	3.91 -2	73.737	.328	3.93 -2	73.999	.021
10	0	2.282 -1	.000	1.928	7.85 -2	.000	.963	7.48 -1	.380	73.956	1.76 0	.383	73.847
	1	2.071 -1	.217	1.710	3.23 -1	.520	.443	6.85 -1	.716	73.248	1.23 0	1.453	72.396
	2	1.875 -1	.414	1.513	1.33 -1	.736	.230	6.15 -1	1.366	69.590	9.35 -1	2.514	72.333
	3	1.696 -1	.593	1.335	5.45 -2	.821	.142	5.25 -1	1.336	69.820	7.43 -1	3.350	73.497
	4	1.526 -1	.753	1.176	2.26 -2	.856	.106	4.75 -1	2.636	68.529	6.50 -1	4.347	69.880
	5	1.372 -1	.898	1.030	9.21 -3	.872	.091	4.66 -1	2.305	68.051	6.11 -1	4.676	69.171
	10	7.703 -2	1.422	.505	5.82 -3	.905	.059	7.35 -1	5.696	65.461	8.18 -1	7.823	66.825
	15	3.628 -2	1.696	.231	4.86 -3	.932	.032	2.09 0	12.361	57.995	2.13 0	15.509	58.258
	20	1.656 -2	1.822	.106	2.73 -3	.953	.010	3.44 0	25.765	45.191	3.46 0	28.540	45.308
	25	7.467 -3	1.879	.049	7.62 -4	.960	.005	3.78 0	65.589	25.367	3.79 0	48.428	25.619
	35	1.577 -3	1.917	.011	6.04 -5	.963	.000	9.35 -1	66.380	4.576	9.87 -1	59.260	4.588
	50	1.913 -4	1.926	.002	1.10 -6	.963	.000	3.91 -2	73.737	.028	3.95 -2	73.826	.021
13	0	2.282 -1	.000	1.928	5.98 -1	.000	.797	7.48 -1	.380	73.956	1.57 0	.000	73.681
	1	2.07 -1	.217	1.710	2.60 -1	.486	.391	6.65 -1	.716	73.240	1.15 0	1.339	72.341
	2	1.875 -1	.414	1.513	1.13 -1	.582	.215	6.15 -1	1.366	69.590	9.16 -1	2.362	71.318
	3	1.696 -1	.593	1.345	4.89 -2	.656	.136	5.25 -1	1.736	69.020	7.43 -1	3.187	70.496
	4	1.526 -1	.753	1.176	2.12 -2	.691	.105	4.75 -1	2.636	68.522	6.48 -1	3.881	69.880
	5	1.372 -1	.898	1.030	9.21 -3	.726	.091	4.66 -1	2.305	68.051	6.11 -1	4.509	69.171
	10	7.703 -2	1.422	.505	5.82 -3	.736	.059	7.35 -1	5.696	65.461	8.18 -1	7.656	66.825
	15	3.628 -2	1.696	.231	4.86 -3	.765	.032	2.09 0	12.361	57.995	2.13 0	15.423	58.258
	20	1.656 -2	1.822	.106	2.73 -3	.786	.010	3.44 0	25.765	45.191	3.46 0	23.373	45.308
	25	7.467 -3	1.879	.049	7.62 -4	.793	.003	3.78 0	65.589	25.367	3.79 0	48.261	25.419
	35	1.577 -3	1.917	.011	6.04 -5	.796	.000	9.05 -1	56.380	4.576	9.87 -1	69.893	4.588
	50	1.913 -4	1.926	.002	1.10 -6	.797	.000	3.91 -2	73.737	.028	3.93 -2	73.660	.021

Table 3.2. Parameters at 0.28 Microns

Met. Rge (km) V_n	Alt. (km) h	Rayleigh atten. coeff. (km^{-1}) β_r	Rayleigh optical thick. (0-h) τ_r	Rayleigh optical thick. (h-∞) τ_r'	Aerosol atten. coeff. (km^{-1}) β_p	Aerosol optical thick. (0-h) τ_p	Aerosol optical thick. (h-∞) τ_p'	Ozone absorp. coeff. (km^{-1}) β_3	Ozone optical thick. (0-h) τ_3	Ozone optical thick. (h-∞) τ_3'	Ext. coeff. (km^{-1}) β_{ext}	Ext. optical thick. (0-h) τ_{ext}	Ext. optical thick. (h-∞) τ_{ext}'
	0	1.948 -1	.000	1.645	3.80 0	.000	3.197	3.77 -1	.000	35.816	4.37 0	.000	40.658
	1	1.767 -1	.186	1.460	1.12 0	2.197	1.000	3.46 -1	.351	35.455	1.65 0	2.744	37.914
	2	1.600 -1	.354	1.291	3.32 -1	2.847	.350	3.11 -1	.590	35.126	8.03 -1	3.890	36.768
	3	1.446 -1	.506	1.139	9.82 -2	3.039	.158	2.65 -1	.777	34.839	5.08 -1	4.522	36.136
	4	1.303 -1	.643	1.002	2.90 -2	3.055	.101	2.40 -1	1.230	34.586	3.99 -1	4.968	35.690
2	5	1.171 -1	.767	.879	8.58 -3	3.112	.085	2.34 -1	1.667	34.350	3.60 -1	5.345	35.313
	10	6.574 -2	1.214	.431	5.42 -3	3.142	.055	3.71 -1	2.774	33.042	4.42 -1	7.130	33.528
	15	3.096 -2	1.448	.197	4.53 -3	3.167	.029	1.05 0	6.542	29.274	1.09 0	11.157	29.501
	20	1.414 -2	1.555	.090	2.55 -3	3.187	.010	1.74 0	13.305	22.811	1.76 0	17.747	22.911
	25	6.373 -3	1.603	.042	7.09 -4	3.194	.003	1.91 0	23.312	12.804	1.92 0	27.809	12.849
	35	1.346 -3	1.636	.009	5.62 -5	3.156	.000	4.57 -1	33.506	2.310	4.58 -1	38.338	2.320
	50	1.633 -4	1.644	.001	1.03 -6	3.157	.000	1.97 -2	35.806	.010	1.99 -2	40.647	.011
	0	1.948 -1	.000	1.645	2.53 0	.000	2.299	3.77 -1	.000	35.816	3.13 0	.000	39.760
	1	1.767 -1	.186	1.460	8.10 -1	1.509	.790	3.46 -1	.361	35.455	1.33 0	2.056	37.704
	2	1.600 -1	.354	1.291	2.60 -1	1.993	.306	3.11 -1	.590	35.126	7.31 -1	3.036	36.724
	3	1.446 -1	.506	1.139	8.34 -2	2.148	.150	2.65 -1	.777	34.839	4.93 -1	3.631	36.128
	4	1.303 -1	.643	1.002	2.67 -2	2.198	.101	2.40 -1	1.230	34.586	3.97 -1	4.071	35.689
3	5	1.171 -1	.767	.879	8.58 -3	2.214	.085	2.34 -1	1.667	34.350	3.60 -1	4.447	35.313
	10	6.574 -2	1.214	.431	5.42 -3	2.244	.055	3.71 -1	2.774	33.042	4.42 -1	6.232	33.528
	15	3.096 -2	1.448	.197	4.53 -3	2.269	.029	1.05 0	6.542	29.274	1.09 0	10.259	29.501
	20	1.414 -2	1.555	.090	2.55 -3	2.289	.010	1.74 0	13.305	22.811	1.76 0	16.849	22.911
	25	6.373 -3	1.603	.042	7.09 -4	2.296	.003	1.91 0	23.312	12.804	1.92 0	26.931	12.849
	35	1.346 -3	1.636	.009	5.62 -5	2.298	.000	4.57 -1	33.506	2.310	4.58 -1	37.440	2.320
	50	1.633 -4	1.644	.001	1.03 -6	2.299	.000	1.97 -2	35.306	.010	1.99 -2	39.749	.011
	0	1.948 -1	.000	1.645	1.89 0	.000	1.828	3.77 -1	.000	35.815	2.46 0	.000	39.289
	1	1.767 -1	.186	1.453	6.42 -1	1.156	.672	3.46 -1	.361	35.455	1.16 0	1.703	37.586
	2	1.600 -1	.354	1.291	2.18 -1	1.549	.279	3.11 -1	.590	35.126	6.89 -1	2.592	36.697
	3	1.446 -1	.506	1.139	7.42 -2	1.683	.145	2.65 -1	.777	34.833	4.84 -1	3.166	36.124
	4	1.303 -1	.643	1.002	2.52 -2	1.728	.100	2.40 -1	1.230	34.586	3.95 -1	3.601	35.689
4	5	1.171 -1	.767	.879	8.58 -3	1.744	.085	2.34 -1	1.667	34.353	3.60 -1	3.977	35.313
	10	6.574 -2	1.214	.431	5.42 -3	1.774	.055	3.71 -1	2.774	33.042	4.42 -1	5.761	33.528
	15	3.096 -2	1.448	.197	4.53 -3	1.799	.029	1.05 0	6.542	29.274	1.09 0	9.789	29.501
	20	1.414 -2	1.555	.090	2.55 -3	1.818	.010	1.74 0	13.305	22.811	1.76 0	16.378	22.911
	25	6.373 -3	1.603	.042	7.09 -4	1.825	.003	1.91 0	23.312	12.804	1.92 0	26.440	12.849
	35	1.346 -3	1.636	.009	5.62 -5	1.828	.000	4.57 -1	33.506	2.310	4.58 -1	36.970	2.320
	50	1.633 -4	1.644	.001	1.03 -6	1.828	.000	1.97 -2	35.306	.010	1.99 -2	39.278	.011
	0	1.948 -1	.000	1.665	1.51 0	.000	1.534	3.77 -1	.000	35.816	2.08 0	.000	38.995
	1	1.767 -1	.186	1.463	5.36 -1	.939	.595	3.46 -1	.351	35.455	1.05 0	1.486	37.509
	2	1.600 -1	.354	1.291	1.91 -1	1.273	.261	3.11 -1	.590	35.126	6.61 -1	2.316	36.679
	3	1.446 -1	.506	1.139	6.78 -2	1.392	.142	2.65 -1	.777	34.839	4.77 -1	2.875	36.120
	4	1.303 -1	.643	1.002	2.41 -2	1.434	.100	2.40 -1	1.230	34.586	3.94 -1	3.307	35.688
5	5	1.171 -1	.767	.879	8.58 -3	1.449	.085	2.34 -1	1.667	34.350	3.60 -1	3.682	35.313
	10	6.574 -2	1.214	.431	5.42 -3	1.479	.055	3.71 -1	2.774	33.042	4.42 -1	5.467	33.528
	15	3.096 -2	1.448	.197	4.53 -3	1.504	.029	1.05 0	6.542	29.274	1.09 0	9.494	29.501
	20	1.414 -2	1.555	.090	2.55 -3	1.524	.010	1.74 0	13.305	22.811	1.76 0	16.084	22.911
	25	6.373 -3	1.603	.042	7.09 -4	1.531	.003	1.91 0	23.312	12.804	1.92 0	26.146	12.849
	35	1.346 -3	1.636	.009	5.62 -5	1.534	.000	4.57 -1	33.506	2.310	4.58 -1	36.675	2.320
	50	1.633 -4	1.644	.001	1.03 -6	1.534	.000	1.97 -2	35.306	.010	1.99 -2	38.984	.011

6	0	1.946 -1	.000	1.645	1.25 0	.000	1.332	3.77 -1	.300	35.816	1.82 0	.000	38.794
	1	1.767 -1	.186	1.463	4.62 -1	.793	.540	3.46 -1	.361	35.455	9.84 -1	1.340	37.454
	2	1.600 -1	.354	1.291	1.71 -1	1.085	.247	3.11 -1	.590	35.126	6.41 -1	2.128	36.665
	3	1.446 -1	.506	1.139	6.30 -2	1.193	.139	2.65 -1	.977	34.839	4.73 -1	2.676	36.117
	4	1.303 -1	.643	1.002	2.32 -2	1.233	.099	2.40 -1	1.230	34.586	3.93 -1	3.106	35.688
	5	1.171 -1	.767	.879	8.58 -3	1.248	.085	2.34 -1	1.467	34.350	3.60 -1	3.481	35.313
	10	6.574 -2	1.214	.431	5.42 -3	1.278	.055	3.71 -1	2.774	33.042	4.42 -1	5.266	33.528
	15	3.096 -2	1.448	.197	4.53 -3	1.303	.029	1.05 0	6.542	29.274	1.09 0	9.293	29.501
	20	1.414 -2	1.555	.090	2.55 -3	1.323	.010	1.74 0	13.305	22.811	1.75 0	15.883	22.911
	25	6.373 -3	1.603	.042	7.09 -4	1.329	.003	1.91 0	23.312	12.804	1.92 0	25.944	12.849
	35	1.346 -3	1.636	.009	5.62 -5	1.332	.000	4.57 -1	33.506	2.310	4.56 -1	36.474	2.320
	50	1.633 -4	1.644	.001	1.03 -6	1.332	.000	1.97 -2	35.306	.010	1.99 -2	38.782	.011
8	0	1.948 -1	.000	1.645	9.31 -1	.000	1.069	3.77 -1	.300	35.816	1.50 0	.000	38.530
	1	1.767 -1	.186	1.453	3.65 -1	.604	.464	3.46 -1	.361	35.455	8.87 -1	1.151	37.379
	2	1.600 -1	.354	1.291	1.43 -1	.841	.228	3.11 -1	.590	35.126	6.13 -1	1.884	36.646
	3	1.446 -1	.506	1.139	5.59 -2	.934	.135	2.65 -1	.977	34.839	4.65 -1	2.417	36.113
	4	1.303 -1	.643	1.002	2.19 -2	.970	.099	2.40 -1	1.230	34.586	3.92 -1	2.843	35.687
	5	1.171 -1	.767	.879	8.58 -3	.984	.085	2.34 -1	1.667	34.350	3.60 -1	[illegible]	35.313
	10	6.574 -2	1.214	.431	5.42 -3	1.014	.055	3.71 -1	2.774	33.042	4.42 -1	5.002	33.528
	15	3.096 -2	1.448	.197	4.53 -3	1.039	.029	1.05 0	6.542	29.274	1.09 0	9.029	29.501
	20	1.414 -2	1.555	.090	2.55 -3	1.059	.010	1.74 0	13.305	22.811	1.76 0	15.619	22.911
	25	6.373 -3	1.603	.042	7.09 -4	1.066	.003	1.91 0	23.312	12.804	1.92 0	25.681	12.849
	35	1.346 -3	1.636	.009	5.62 -5	1.069	.000	4.57 -1	33.506	2.310	4.58 -1	36.210	2.320
	50	1.633 -4	1.644	.001	1.03 -6	1.069	.000	1.97 -2	35.306	.010	1.99 -2	38.519	.011
10	0	1.948 -1	.000	1.645	7.42 -1	.000	.906	3.77 -1	.300	35.816	1.31 0	.000	38.368
	1	1.767 -1	.186	1.450	3.04 -1	.491	.416	3.46 -1	.361	35.455	8.26 -1	1.038	37.330
	2	1.600 -1	.354	1.291	1.25 -1	.652	.215	3.11 -1	.590	35.126	5.95 -1	1.735	36.633
	3	1.446 -1	.506	1.139	5.11 -2	.774	.132	2.65 -1	.977	34.839	4.61 -1	2.257	36.110
	4	1.303 -1	.643	1.002	2.09 -2	.808	.098	2.40 -1	1.230	34.586	3.91 -1	2.681	35.687
	5	1.171 -1	.767	.879	8.58 -3	.822	.085	2.34 -1	1.667	34.350	3.60 -1	3.055	35.313
	10	6.574 -2	1.214	.431	5.42 -3	.852	.055	3.71 -1	2.774	33.042	4.42 -1	4.840	33.528
	15	3.096 -2	1.448	.197	4.53 -3	.877	.029	1.05 0	6.542	29.274	1.09 0	8.867	29.501
	20	1.414 -2	1.555	.090	2.55 -3	.857	.010	1.74 0	13.305	22.811	1.76 0	15.457	22.911
	25	6.373 -3	1.603	.042	7.09 -4	.903	.003	1.91 0	23.312	12.804	1.92 0	25.518	12.849
	35	1.346 -3	1.636	.009	5.62 -5	.906	.000	4.57 -1	33.506	2.310	4.58 -1	36.048	2.320
	50	1.633 -4	1.644	.001	1.03 -6	.906	.000	1.97 -2	35.306	.010	1.99 -2	38.356	.011
13	0	1.948 -1	.000	1.645	5.65 -1	.000	.749	3.77 -1	.300	35.816	1.14 0	.000	38.211
	1	1.767 -1	.186	1.460	2.45 -1	.383	.366	3.46 -1	.361	35.455	7.67 -1	.930	37.281
	2	1.600 -1	.354	1.291	1.06 -1	.549	.201	3.11 -1	.590	35.126	5.76 -1	1.592	36.619
	3	1.446 -1	.506	1.139	4.58 -2	.620	.129	2.65 -1	.977	34.839	4.55 -1	2.103	36.107
	4	1.303 -1	.643	1.002	1.98 -2	.651	.098	2.40 -1	1.230	34.586	3.90 -1	2.524	35.687
	5	1.171 -1	.767	.879	8.58 -3	.665	.085	2.34 -1	1.667	34.350	3.60 -1	2.898	35.313
	10	6.574 -2	1.214	.431	5.42 -3	.695	.055	3.71 -1	2.774	33.042	4.42 -1	4.683	33.528
	15	3.096 -2	1.448	.197	4.53 -3	.720	.029	1.05 0	6.542	29.274	1.09 0	8.710	29.501
	20	1.414 -2	1.555	.090	2.55 -3	.740	.010	1.74 0	13.305	22.811	1.76 0	15.300	22.911
	25	6.373 -3	1.603	.042	7.09 -4	.746	.003	1.91 0	23.312	12.804	1.92 0	25.361	12.849
	35	1.346 -3	1.636	.009	5.62 -5	.749	.000	4.57 -1	33.506	2.310	4.58 -1	35.891	2.320
	50	1.633 -4	1.644	.001	1.03 -6	.749	.000	1.97 -2	35.306	.010	1.99 -2	38.199	.011

Table 3.3. Parameters at 0.30 Microns

Met. Rge (km) V_n	Alt. (km) h	Rayleigh atten. coeff. (km^{-1}) β_r	Rayleigh optical thick. (0-h) τ_r	Rayleigh optical thick. (h-∞) τ'_r	Aerosol atten. coeff. (km^{-1}) β_p	Aerosol optical thick. (0-h) τ_p	Aerosol optical thick. (h-∞) τ'_p	Ozone absorp. coeff. (km^{-1}) β_3	Ozone optical thick. (0-h) τ_3	Ozone optical thick. (h-∞) τ'_3	Ext. coeff. (km^{-1}) β_{ext}	Ext. optical thick. (0-h) τ_{ext}	Ext. optical thick. (h-∞) τ'_{ext}
2	0	1.446 -1	.000	1.222	3.58 0	.000	3.023	3.60 -2	.000	3.413	3.76 0	.000	7.657
	1	1.312 -1	.138	1.084	1.06 0	2.073	.950	3.29 -2	.034	3.378	1.23 0	2.245	5.412
	2	1.188 -1	.263	.959	3.16 -1	2.688	.335	2.96 -2	.066	3.347	4.64 -1	3.017	4.640
	3	1.073 -1	.376	.846	9.37 -2	2.871	.152	2.52 -2	.093	3.320	2.26 -1	3.340	4.317
	4	9.672 -2	.477	.744	2.78 -2	2.925	.098	2.28 -2	.117	3.295	1.47 -1	3.520	4.137
	5	8.693 -2	.569	.652	8.26 -3	2.942	.081	2.23 -2	.140	3.273	1.18 -1	3.650	4.007
	10	4.881 -2	.901	.320	5.22 -3	2.970	.053	3.53 -2	.264	3.148	8.94 -2	4.136	3.521
	15	2.299 -2	1.075	.147	4.36 -3	2.995	.028	1.00 -1	.523	2.789	1.28 -1	4.693	2.964
	20	1.050 -2	1.154	.067	2.45 -3	3.014	.009	1.66 -1	1.239	2.173	1.79 -1	5.407	2.250
	25	4.732 -3	1.191	.031	6.83 -4	3.020	.003	1.82 -1	2.193	1.220	1.87 -1	6.403	1.254
	35	9.990 -4	1.214	.007	5.41 -5	3.023	.000	4.35 -2	3.193	.220	4.46 -2	7.430	.227
	50	1.212 -4	1.221	.001	9.91 -7	3.023	.000	1.88 -3	3.412	.001	2.00 -3	7.655	.002
3	0	1.446 -1	.000	1.222	2.38 0	.000	2.175	3.60 -2	.000	3.413	2.56 0	.000	6.809
	1	1.312 -1	.138	1.084	7.66 -1	1.424	.751	3.29 -2	.034	3.378	9.31 -1	1.596	5.213
	2	1.188 -1	.263	.959	2.47 -1	1.882	.292	2.96 -2	.066	3.347	3.95 -1	2.211	4.598
	3	1.073 -1	.376	.846	7.96 -2	2.030	.144	2.52 -2	.093	3.320	2.12 -1	2.499	4.310
	4	9.672 -2	.477	.744	2.56 -2	2.078	.097	2.28 -2	.117	3.295	1.45 -1	2.672	4.136
	5	8.693 -2	.569	.652	8.26 -3	2.093	.081	2.23 -2	.140	3.273	1.18 -1	2.802	4.007
	10	4.881 -2	.901	.320	5.22 -3	2.122	.053	3.53 -2	.264	3.148	8.94 -2	3.288	3.521
	15	2.299 -2	1.075	.147	4.36 -3	2.146	.028	1.00 -1	.523	2.789	1.28 -1	3.844	2.964
	20	1.050 -2	1.154	.067	2.45 -3	2.165	.009	1.66 -1	1.239	2.173	1.79 -1	4.559	2.250
	25	4.732 -3	1.191	.031	6.83 -4	2.172	.003	1.82 -1	2.193	1.220	1.87 -1	5.555	1.254
	35	9.990 -4	1.214	.007	5.41 -5	2.174	.000	4.35 -2	3.193	.220	4.46 -2	6.581	.227
	50	1.212 -4	1.221	.001	9.91 -7	2.175	.000	1.88 -3	3.412	.001	2.00 -3	6.807	.002
4	0	1.446 -1	.000	1.222	1.78 0	.000	1.730	3.60 -2	.000	3.413	1.96 0	.000	6.364
	1	1.312 -1	.138	1.084	6.08 -1	1.091	.639	3.29 -2	.034	3.378	7.72 -1	1.263	5.101
	2	1.188 -1	.263	.959	2.08 -1	1.463	.267	2.96 -2	.066	3.347	3.56 -1	1.792	4.573
	3	1.073 -1	.376	.846	7.09 -2	1.591	.140	2.52 -2	.093	3.320	2.03 -1	2.059	4.305
	4	9.672 -2	.477	.744	2.42 -2	1.634	.096	2.28 -2	.117	3.295	1.44 -1	2.229	4.136
	5	8.693 -2	.569	.652	8.26 -3	1.649	.081	2.23 -2	.140	3.273	1.18 -1	2.358	4.007
	10	4.881 -2	.901	.320	5.22 -3	1.678	.053	3.53 -2	.264	3.148	8.94 -2	2.843	3.521
	15	2.299 -2	1.075	.147	4.36 -3	1.702	.028	1.00 -1	.523	2.789	1.28 -1	3.400	2.964
	20	1.050 -2	1.154	.067	2.45 -3	1.721	.009	1.66 -1	1.239	2.173	1.79 -1	4.114	2.250
	25	4.732 -3	1.191	.031	6.83 -4	1.727	.003	1.82 -1	2.193	1.220	1.87 -1	5.111	1.254
	35	9.990 -4	1.214	.007	5.41 -5	1.730	.000	4.35 -2	3.193	.220	4.46 -2	6.137	.227
	50	1.212 -4	1.221	.001	9.91 -7	1.730	.000	1.88 -3	3.412	.001	2.00 -3	6.362	.002
5	0	1.446 -1	.000	1.222	1.42 0	.000	1.452	3.60 -2	.000	3.413	1.60 0	.000	6.086
	1	1.312 -1	.138	1.084	5.07 -1	.886	.566	3.29 -2	.034	3.378	6.71 -1	1.058	5.028
	2	1.188 -1	.263	.959	1.81 -1	1.203	.249	2.96 -2	.066	3.347	3.30 -1	1.531	4.555
	3	1.073 -1	.376	.846	6.47 -2	1.316	.136	2.52 -2	.093	3.320	1.97 -1	1.784	4.302
	4	9.672 -2	.477	.744	2.31 -2	1.356	.096	2.28 -2	.117	3.295	1.43 -1	1.951	4.135
	5	8.693 -2	.569	.652	8.26 -3	1.371	.081	2.23 -2	.140	3.273	1.18 -1	2.079	4.007
	10	4.881 -2	.901	.320	5.22 -3	1.399	.053	3.53 -2	.264	3.148	8.94 -2	2.565	3.521
	15	2.299 -2	1.075	.147	4.36 -3	1.424	.028	1.00 -1	.523	2.789	1.28 -1	3.122	2.964
	20	1.050 -2	1.154	.067	2.45 -3	1.443	.009	1.66 -1	1.239	2.173	1.79 -1	3.836	2.250
	25	4.732 -3	1.191	.031	6.83 -4	1.449	.003	1.82 -1	2.193	1.220	1.87 -1	4.832	1.254
	35	9.990 -4	1.214	.007	5.41 -5	1.452	.000	4.35 -2	3.193	.220	4.46 -2	5.859	.227
	50	1.212 -4	1.221	.001	9.91 -7	1.452	.000	1.88 -3	3.412	.001	2.00 -3	6.084	.002

6	0	1.446 -1	.000	1.222	1.18 0	.000	1.262	3.60 -2	.000	3.413	1.36 0	.000	5.896
	1	1.312 -1	.138	1.084	4.37 -1	.748	.514	3.29 -2	.334	3.378	6.01 -1	.920	4.976
	2	1.188 -1	.263	.959	1.62 -1	1.025	.236	2.96 -2	.366	3.347	3.11 -1	1.353	4.562
	3	1.073 -1	.376	.846	6.01 -2	1.128	.134	2.52 -2	.393	3.320	1.93 -1	1.597	4.299
	4	9.672 -2	.477	.744	2.23 -2	1.166	.096	2.28 -2	.117	3.295	1.42 -1	1.761	4.135
	5	8.693 -2	.569	.652	8.26 -3	1.180	.081	2.23 -2	.140	3.273	1.18 -1	1.889	4.007
	10	4.881 -2	.901	.320	5.22 -3	1.209	.053	3.53 -2	.264	3.148	8.94 -2	2.375	3.521
	15	2.299 -2	1.075	.167	4.36 -3	1.233	.028	1.00 -1	.523	2.789	1.28 -1	2.932	2.964
	20	1.050 -2	1.154	.067	2.45 -3	1.252	.009	1.66 -1	1.239	2.173	1.79 -1	3.646	2.250
	25	4.732 -3	1.191	.031	6.83 -4	1.259	.003	1.82 -1	2.193	1.220	1.87 -1	4.642	1.254
	35	9.990 -4	1.214	.007	5.41 -5	1.261	.000	4.35 -2	3.193	.220	4.46 -2	5.669	.227
	50	1.212 -4	1.221	.001	9.91 -7	1.262	.000	1.88 -3	3.412	.001	2.00 -3	5.894	.002
8	0	1.446 -1	.000	1.222	8.77 -1	.600	1.013	3.60 -2	.000	3.413	1.06 0	.000	5.647
	1	1.312 -1	.138	1.084	3.45 -1	.570	.442	3.29 -2	.334	3.378	5.09 -1	.742	4.904
	2	1.188 -1	.263	.959	1.36 -1	.755	.218	2.96 -2	.366	3.347	2.84 -1	1.123	4.524
	3	1.073 -1	.376	.846	5.34 -2	.883	.130	2.52 -2	.393	3.320	1.86 -1	1.352	4.295
	4	9.672 -2	.477	.744	2.10 -2	.918	.095	2.28 -2	.117	3.295	1.41 -1	1.512	4.135
	5	8.693 -2	.569	.652	8.26 -3	.931	.081	2.23 -2	.140	3.273	1.18 -1	1.640	4.007
	10	4.881 -2	.901	.320	5.22 -3	.960	.053	3.53 -2	.264	3.148	8.94 -2	2.126	3.521
	15	2.299 -2	1.075	.167	4.36 -3	.984	.028	1.00 -1	.523	2.789	1.28 -1	2.683	2.964
	20	1.050 -2	1.154	.067	2.45 -3	1.003	.009	1.66 -1	1.239	2.173	1.79 -1	3.397	2.250
	25	4.732 -3	1.191	.031	6.83 -4	1.010	.003	1.82 -1	2.193	1.220	1.87 -1	4.393	1.254
	35	9.990 -4	1.214	.007	5.41 -5	1.012	.000	4.35 -2	3.193	.220	4.46 -2	5.420	.227
	50	1.212 -4	1.221	.001	9.91 -7	1.013	.000	1.88 -3	3.412	.001	2.00 -3	5.645	.002
10	0	1.446 -1	.000	1.222	6.98 -1	.000	.859	3.60 -2	.000	3.413	8.79 -1	.000	5.493
	1	1.312 -1	.138	1.084	2.88 -1	.463	.396	3.29 -2	.334	3.378	4.52 -1	.635	4.858
	2	1.188 -1	.263	.959	1.18 -1	.654	.206	2.96 -2	.366	3.347	2.67 -1	.982	4.511
	3	1.073 -1	.376	.846	4.87 -2	.732	.127	2.52 -2	.393	3.320	1.81 -1	1.201	4.293
	4	9.672 -2	.477	.744	2.01 -2	.764	.095	2.28 -2	.117	3.295	1.40 -1	1.359	4.134
	5	8.693 -2	.569	.652	8.26 -3	.778	.081	2.23 -2	.140	3.273	1.18 -1	1.486	4.007
	10	4.881 -2	.901	.320	5.22 -3	.807	.053	3.53 -2	.264	3.148	8.94 -2	1.972	3.521
	15	2.299 -2	1.075	.167	4.36 -3	.831	.028	1.00 -1	.623	2.789	1.28 -1	2.529	2.964
	20	1.050 -2	1.154	.067	2.45 -3	.850	.009	1.66 -1	1.239	2.173	1.79 -1	3.243	2.250
	25	4.732 -3	1.191	.031	6.83 -4	.856	.003	1.82 -1	2.193	1.220	1.87 -1	4.239	1.254
	35	9.990 -4	1.214	.007	5.41 -5	.859	.000	4.35 -2	3.193	.220	4.46 -2	5.266	.227
	50	1.212 -4	1.221	.001	9.91 -7	.859	.000	1.88 -3	3.412	.001	2.00 -3	5.491	.002
13	0	1.446 -1	.000	1.222	5.33 -1	.000	.711	3.60 -2	.000	3.413	7.13 -1	.000	5.345
	1	1.312 -1	.138	1.084	2.31 -1	.361	.349	3.29 -2	.334	3.378	3.95 -1	.534	4.811
	2	1.188 -1	.263	.959	1.01 -1	.518	.192	2.96 -2	.066	3.347	2.49 -1	.847	4.498
	3	1.073 -1	.376	.846	4.37 -2	.587	.124	2.52 -2	.393	3.320	1.76 -1	1.055	4.290
	4	9.672 -2	.477	.744	1.90 -2	.616	.094	2.28 -2	.117	3.295	1.39 -1	1.211	4.134
	5	8.693 -2	.569	.652	8.26 -3	.629	.081	2.23 -2	.140	3.273	1.18 -1	1.338	4.007
	10	4.881 -2	.901	.320	5.22 -3	.658	.053	3.53 -2	.264	3.148	8.94 -2	1.824	3.521
	15	2.299 -2	1.075	.167	4.36 -3	.682	.028	1.00 -1	.523	2.789	1.28 -1	2.381	2.964
	20	1.050 -2	1.154	.067	2.45 -3	.701	.009	1.66 -1	1.239	2.173	1.79 -1	3.095	2.250
	25	4.732 -3	1.191	.031	6.83 -4	.708	.003	1.82 -1	2.193	1.220	1.87 -1	4.091	1.254
	35	9.990 -4	1.214	.007	5.41 -5	.710	.000	4.35 -2	3.193	.220	4.46 -2	5.118	.227
	50	1.212 -4	1.221	.001	9.91 -7	.711	.000	1.88 -3	3.412	.001	2.00 -3	5.343	.002

Table 3.4. Parameters at 0.32 Microns

Met. Rge (km) V_n	Alt. (km) h	Rayleigh atten. coeff. (km^{-1}) β_r	Rayleigh optical thick. (0-h) τ_r	Rayleigh optical thick. (h-∞) τ'_r	Aerosol atten. coeff. (km^{-1}) β_p	Aerosol optical thick. (0-h) τ_p	Aerosol optical thick. (h-∞) τ'_p	Ozone absorp. coeff. (km^{-1}) β_3	Ozone optical thick. (0-h) τ_3	Ozone optical thick. (h-∞) τ'_3	Ext. coeff. (km^{-1}) β_{ext}	Ext. optical thick. (0-h) τ_{ext}	Ext. optical thick. (h-∞) τ'_{ext}
2	0	1.098 -1	.000	.927	3.36 0	.000	2.849	3.20 -3	.000	.303	3.47 0	.000	4.080
	1	9.967 -2	.105	.823	1.00 0	1.949	.900	2.93 -3	.003	.300	1.10 0	2.056	2.024
	2	9.020 -2	.199	.728	2.99 -1	2.530	.319	2.63 -3	.006	.298	3.92 -1	2.735	1.345
	3	8.148 -2	.285	.642	8.92 -2	2.704	.146	2.24 -3	.008	.295	1.73 -1	2.997	1.083
	4	7.342 -2	.362	.565	2.66 -2	2.755	.094	2.03 -3	.010	.293	1.02 -1	3.128	.952
	5	6.599 -2	.432	.495	7.94 -3	2.771	.078	1.98 -3	.012	.291	7.59 -2	3.215	.865
	10	3.705 -2	.684	.243	5.02 -3	2.799	.051	3.14 -3	.024	.280	4.52 -2	3.506	.574
	15	1.745 -2	.816	.111	4.19 -3	2.822	.027	8.93 -3	.055	.248	3.06 -2	3.693	.387
	20	7.967 -3	.876	.051	2.36 -3	2.840	.009	1.47 -2	.110	.193	2.51 -2	3.827	.253
	25	3.592 -3	.904	.024	6.57 -4	2.846	.003	1.62 -2	.195	.108	2.04 -2	3.945	.135
	35	7.584 -4	.922	.005	5.21 -5	2.849	.000	3.87 -3	.284	.020	4.68 -3	4.055	.025
	50	9.202 -5	.927	.001	9.53 -7	2.849	.000	1.67 -4	.303	.000	2.60 -4	4.079	.001
3	0	1.098 -1	.000	.927	2.23 0	.000	2.050	3.20 -3	.000	.303	2.34 0	.000	3.281
	1	9.967 -2	.105	.823	7.23 -1	1.338	.712	2.93 -3	.003	.300	8.25 -1	1.446	1.835
	2	9.020 -2	.199	.728	2.34 -1	1.772	.279	2.63 -3	.006	.298	3.27 -1	1.977	1.304
	3	8.148 -2	.285	.642	7.58 -2	1.912	.138	2.24 -3	.008	.295	1.59 -1	2.205	1.076
	4	7.342 -2	.362	.565	2.45 -2	1.957	.093	2.03 -3	.010	.293	1.00 -1	2.330	.951
	5	6.599 -2	.432	.495	7.94 -3	1.972	.078	1.98 -3	.012	.291	7.59 -2	2.417	.865
	10	3.705 -2	.684	.243	5.02 -3	2.000	.051	3.14 -3	.024	.280	4.52 -2	2.708	.574
	15	1.745 -2	.816	.111	4.19 -3	2.023	.027	8.93 -3	.055	.248	3.06 -2	2.895	.387
	20	7.967 -3	.876	.051	2.36 -3	2.041	.009	1.47 -2	.110	.193	2.51 -2	3.028	.253
	25	3.592 -3	.904	.024	6.57 -4	2.048	.003	1.62 -2	.195	.108	2.04 -2	3.146	.135
	35	7.584 -4	.922	.005	5.21 -5	2.050	.000	3.87 -3	.284	.020	4.68 -3	3.256	.025
	50	9.202 -5	.927	.001	9.53 -7	2.050	.000	1.67 -4	.303	.000	2.60 -4	3.280	.001
4	0	1.098 -1	.000	.927	1.67 0	.000	1.632	3.20 -3	.000	.303	1.78 0	.000	2.863
	1	9.967 -2	.105	.823	5.73 -1	1.026	.607	2.93 -3	.003	.300	6.76 -1	1.133	1.730
	2	9.020 -2	.199	.728	1.97 -1	1.377	.255	2.63 -3	.006	.298	2.89 -1	1.583	1.280
	3	8.148 -2	.285	.642	6.75 -2	1.498	.134	2.24 -3	.008	.295	1.51 -1	1.792	1.071
	4	7.342 -2	.362	.565	2.31 -2	1.540	.093	2.03 -3	.010	.293	9.86 -2	1.912	.950
	5	6.599 -2	.432	.495	7.94 -3	1.554	.078	1.98 -3	.012	.291	7.59 -2	1.998	.865
	10	3.705 -2	.684	.243	5.02 -3	1.582	.051	3.14 -3	.024	.280	4.52 -2	2.289	.574
	15	1.745 -2	.816	.111	4.19 -3	1.605	.027	8.93 -3	.055	.248	3.06 -2	2.476	.387
	20	7.967 -3	.876	.051	2.36 -3	1.623	.009	1.47 -2	.110	.193	2.51 -2	2.610	.253
	25	3.592 -3	.904	.024	6.57 -4	1.629	.003	1.62 -2	.195	.108	2.04 -2	2.728	.135
	35	7.584 -4	.922	.005	5.21 -5	1.632	.000	3.87 -3	.284	.020	4.68 -3	2.838	.025
	50	9.202 -5	.927	.001	9.53 -7	1.632	.000	1.67 -4	.303	.000	2.60 -4	2.862	.001
5	0	1.098 -1	.000	.927	1.33 0	.000	1.370	3.20 -3	.000	.303	1.44 0	.000	2.601
	1	9.967 -2	.105	.823	4.78 -1	.833	.537	2.93 -3	.003	.300	5.80 -1	.941	1.660
	2	9.020 -2	.199	.728	1.72 -1	1.132	.238	2.63 -3	.006	.298	2.64 -1	1.337	1.264
	3	8.148 -2	.285	.642	6.16 -2	1.239	.131	2.24 -3	.008	.295	1.45 -1	1.533	1.068
	4	7.342 -2	.362	.565	2.21 -2	1.278	.092	2.03 -3	.010	.293	9.76 -2	1.651	.950
	5	6.599 -2	.432	.495	7.94 -3	1.292	.078	1.98 -3	.012	.291	7.59 -2	1.736	.865
	10	3.705 -2	.684	.243	5.02 -3	1.320	.051	3.14 -3	.024	.280	4.52 -2	2.027	.574
	15	1.745 -2	.816	.111	4.19 -3	1.343	.027	8.93 -3	.055	.248	3.06 -2	2.214	.387
	20	7.967 -3	.876	.051	2.36 -3	1.361	.009	1.47 -2	.110	.193	2.51 -2	2.348	.253
	25	3.592 -3	.904	.024	6.57 -4	1.367	.003	1.62 -2	.195	.108	2.04 -2	2.466	.135
	35	7.584 -4	.922	.005	5.21 -5	1.370	.000	3.87 -3	.284	.020	4.68 -3	2.576	.025
	50	9.202 -5	.927	.001	9.53 -7	1.370	.000	1.67 -4	.303	.000	2.60 -4	2.600	.001

6	0	1.098 -1	.000	.927	1.11 0	.000	1.191	3.20 -3	.300	.303	1.22 0	.000	2.422
	1	9.962 -2	.105	.823	4.12 -1	.703	.488	2.93 -3	.303	.300	5.15 -1	.811	1.611
	2	9.020 -2	.199	.728	1.54 -1	.965	.226	2.63 -3	.306	.298	2.46 -1	1.170	1.251
	3	8.148 -2	.285	.642	5.72 -2	1.063	.128	2.24 -3	.308	.295	1.41 -1	1.356	1.066
	4	7.342 -2	.362	.565	2.13 -2	1.099	.092	2.03 -3	.310	.293	9.68 -2	1.472	.950
	5	6.599 -2	.432	.495	7.94 -3	1.113	.078	1.98 -3	.312	.291	7.59 -2	1.557	.865
	10	3.705 -2	.684	.243	5.02 -3	1.140	.051	3.14 -3	.324	.280	4.52 -2	1.848	.574
	15	1.745 -2	.816	.111	4.19 -3	1.164	.027	8.93 -3	.355	.248	3.06 -2	2.035	.387
	20	7.967 -3	.876	.051	2.36 -3	1.182	.009	1.47 -2	.110	.193	2.51 -2	2.168	.253
	25	3.592 -3	.904	.024	6.57 -4	1.188	.003	1.62 -2	.195	.108	2.04 -2	2.287	.135
	35	7.584 -4	.922	.005	5.21 -5	1.191	.000	3.87 -3	.284	.020	4.68 -3	2.397	.025
	50	9.202 -5	.927	.001	9.53 -7	1.191	.000	1.67 -4	.303	.000	2.60 -4	2.421	.001
8	0	1.098 -1	.000	.927	8.23 -1	.000	.956	3.20 -3	.300	.303	9.36 -1	.000	2.187
	1	9.962 -2	.105	.823	3.25 -1	.536	.420	2.93 -3	.303	.300	4.28 -1	.644	1.543
	2	9.020 -2	.199	.728	1.29 -1	.748	.208	2.63 -3	.306	.298	2.21 -1	.953	1.234
	3	8.148 -2	.285	.642	5.08 -2	.832	.125	2.24 -3	.008	.295	1.35 -1	1.125	1.062
	4	7.342 -2	.362	.565	2.01 -2	.865	.091	2.03 -3	.310	.293	9.55 -2	1.238	.949
	5	6.599 -2	.432	.495	7.94 -3	.878	.078	1.98 -3	.312	.291	7.59 -2	1.323	.865
	10	3.705 -2	.684	.243	5.02 -3	.906	.051	3.14 -3	.324	.280	4.52 -2	1.614	.574
	15	1.745 -2	.816	.111	4.19 -3	.929	.027	8.93 -3	.355	.248	3.06 -2	1.801	.387
	20	7.967 -3	.876	.051	2.36 -3	.947	.009	1.47 -2	.110	.193	2.51 -2	1.934	.253
	25	3.592 -3	.904	.024	6.57 -4	.954	.003	1.62 -2	.195	.108	2.04 -2	2.052	.135
	35	7.584 -4	.922	.005	5.21 -5	.956	.000	3.87 -3	.284	.020	4.68 -3	2.162	.025
	50	9.202 -5	.927	.001	9.53 -7	.956	.000	1.67 -4	.303	.000	2.60 -4	2.186	.001
10	0	1.098 -1	.000	.927	6.55 -1	.000	.812	3.20 -3	.300	.303	7.68 -1	.000	2.042
	1	9.962 -2	.105	.823	2.71 -1	.435	.376	2.93 -3	.303	.300	3.74 -1	.543	1.500
	2	9.020 -2	.199	.728	1.12 -1	.615	.196	2.63 -3	.306	.298	2.05 -1	.821	1.222
	3	8.148 -2	.285	.642	4.64 -2	.690	.122	2.24 -3	.308	.295	1.30 -1	.983	1.059
	4	7.342 -2	.362	.565	1.92 -2	.721	.091	2.03 -3	.310	.293	9.47 -2	1.094	.949
	5	6.599 -2	.432	.495	7.94 -3	.733	.078	1.98 -3	.312	.291	7.59 -2	1.178	.865
	10	3.705 -2	.684	.243	5.02 -3	.761	.051	3.14 -3	.324	.280	4.52 -2	1.469	.574
	15	1.745 -2	.816	.111	4.19 -3	.784	.027	8.93 -3	.355	.248	3.06 -2	1.656	.387
	20	7.967 -3	.876	.051	2.36 -3	.803	.009	1.47 -2	.110	.193	2.51 -2	1.789	.253
	25	3.592 -3	.904	.024	6.57 -4	.809	.003	1.62 -2	.195	.108	2.04 -2	1.908	.135
	35	7.584 -4	.922	.005	5.21 -5	.812	.000	3.87 -3	.284	.020	4.68 -3	2.017	.025
	50	9.202 -5	.927	.001	9.53 -7	.812	.000	1.67 -4	.303	.000	2.60 -4	2.042	.001
13	0	1.098 -1	.000	.927	5.00 -1	.000	.672	3.20 -3	.000	.303	6.13 -1	.000	1.903
	1	9.962 -2	.105	.823	2.18 -1	.340	.332	2.93 -3	.203	.300	3.21 -1	.447	1.455
	2	9.020 -2	.199	.728	9.53 -2	.488	.184	2.63 -3	.306	.298	1.88 -1	.693	1.209
	3	8.148 -2	.285	.642	4.16 -2	.553	.119	2.24 -3	.308	.295	1.25 -1	.846	1.056
	4	7.342 -2	.362	.565	1.82 -2	.581	.091	2.03 -3	.310	.293	9.36 -2	.954	.949
	5	6.599 -2	.432	.495	7.94 -3	.554	.078	1.98 -3	.312	.291	7.59 -2	1.038	.865
	10	3.705 -2	.684	.243	5.02 -3	.621	.051	3.14 -3	.324	.280	4.52 -2	1.329	.574
	15	1.745 -2	.816	.111	4.19 -3	.645	.027	8.93 -3	.355	.248	3.06 -2	1.516	.387
	20	7.967 -3	.876	.051	2.36 -3	.663	.009	1.47 -2	.110	.193	2.51 -2	1.649	.253
	25	3.592 -3	.904	.024	6.57 -4	.669	.003	1.62 -2	.195	.108	2.04 -2	1.768	.135
	35	7.584 -4	.922	.005	5.21 -5	.672	.000	3.87 -3	.284	.020	4.68 -3	1.878	.025
	50	9.202 -5	.927	.001	9.53 -7	.672	.000	1.67 -4	.303	.000	2.60 -4	1.902	.001

Table 3.5. Parameters at 0.34 Microns

Met. Rge (km) V_n	Alt. (km) h	Rayleigh atten. coeff. (km^{-1}) β_r	Rayleigh optical thick. (0-h) τ_r	Rayleigh optical thick. (h-∞) τ'_r	Aerosol atten. coeff. (km^{-1}) β_p	Aerosol optical thick. (0-h) τ_p	Aerosol optical thick. (h-∞) τ'_p	Ozone absorp. coeff. (km^{-1}) β_3	Ozone optical thick. (0-h) τ_3	Ozone optical thick. (h-∞) τ'_3	Ext. coeff. (km^{-1}) β_{ext}	Ext. optical thick. (0-h) τ_{ext}	Ext. optical thick. (h-∞) τ'_{ext}
	0	8.492 -2	.000	.717	3.14 0	.000	2.675	2.28 -4	.000	.022	3.22 0	.000	3.414
	1	7.707 -2	.081	.636	9.41 -1	1.824	.851	2.09 -4	.000	.021	1.02 0	1.905	1.509
	2	6.978 -2	.154	.563	2.82 -1	2.372	.303	1.88 -4	.000	.021	3.52 -1	2.526	.888
	3	6.303 -2	.221	.497	8.47 -2	2.536	.139	1.60 -4	.001	.021	1.48 -1	2.757	.657
	4	5.680 -2	.280	.437	2.54 -2	2.585	.090	1.45 -4	.001	.021	8.24 -2	2.866	.548
2	5	5.105 -2	.334	.383	7.63 -3	2.600	.075	1.41 -4	.001	.021	5.88 -2	2.935	.479
	10	2.867 -2	.529	.188	4.82 -3	2.627	.049	2.24 -4	.002	.020	3.37 -2	3.157	.257
	15	1.350 -2	.631	.086	4.03 -3	2.649	.026	6.36 -4	.004	.018	1.82 -2	3.284	.130
	20	6.164 -3	.678	.039	2.26 -3	2.666	.009	1.05 -3	.008	.014	9.48 -3	3.352	.062
	25	2.779 -3	.699	.018	6.30 -4	2.672	.003	1.15 -3	.014	.008	4.56 -3	3.385	.029
	35	5.867 -4	.713	.004	5.00 -5	2.675	.000	2.76 -4	.020	.001	9.13 -4	3.408	.006
	50	7.119 -5	.717	.001	9.14 -7	2.675	.000	1.19 -5	.022	.000	8.40 -5	3.413	.001
	0	8.492 -2	.000	.717	2.08 0	.000	1.926	2.28 -4	.000	.022	2.17 0	.000	2.665
	1	7.707 -2	.081	.636	6.79 -1	1.253	.673	2.09 -4	.000	.021	7.56 -1	1.334	1.331
	2	6.978 -2	.154	.563	2.21 -1	1.661	.265	1.88 -4	.000	.021	2.91 -1	1.816	.850
	3	6.303 -2	.221	.497	7.19 -2	1.794	.133	1.60 -4	.001	.021	1.35 -1	2.015	.650
	4	5.680 -2	.280	.437	2.34 -2	1.837	.089	1.45 -4	.001	.021	8.06 -2	2.118	.547
3	5	5.105 -2	.334	.383	7.63 -3	1.851	.075	1.41 -4	.001	.021	5.88 -2	2.186	.479
	10	2.867 -2	.529	.188	4.82 -3	1.878	.049	2.24 -4	.002	.020	3.37 -2	2.409	.257
	15	1.350 -2	.631	.086	4.03 -3	1.900	.026	6.36 -4	.004	.018	1.82 -2	2.535	.130
	20	6.164 -3	.678	.039	2.26 -3	1.918	.009	1.05 -3	.008	.014	9.48 -3	2.603	.062
	25	2.779 -3	.699	.018	6.30 -4	1.924	.003	1.15 -3	.014	.008	4.56 -3	2.637	.029
	35	5.867 -4	.713	.004	5.00 -5	1.926	.000	2.76 -4	.020	.001	9.13 -4	2.660	.006
	50	7.119 -5	.717	.001	9.14 -7	1.926	.000	1.19 -5	.022	.000	8.40 -5	2.665	.001
	0	8.492 -2	.000	.717	1.56 0	.000	1.534	2.28 -4	.000	.022	1.65 0	.000	2.273
	1	7.707 -2	.081	.636	5.38 -1	.960	.574	2.09 -4	.000	.021	6.15 -1	1.041	1.232
	2	6.978 -2	.154	.563	1.86 -1	1.291	.243	1.88 -4	.000	.021	2.56 -1	1.446	.827
	3	6.303 -2	.221	.497	6.41 -2	1.406	.128	1.60 -4	.001	.021	1.27 -1	1.627	.646
	4	5.680 -2	.280	.437	2.21 -2	1.445	.089	1.45 -4	.001	.021	7.90 -2	1.726	.547
4	5	5.105 -2	.334	.383	7.63 -3	1.459	.075	1.41 -4	.001	.021	5.88 -2	1.794	.479
	10	2.867 -2	.529	.188	4.82 -3	1.485	.049	2.24 -4	.002	.020	3.37 -2	2.016	.257
	15	1.350 -2	.631	.086	4.03 -3	1.508	.026	6.36 -4	.004	.018	1.82 -2	2.143	.130
	20	6.164 -3	.678	.039	2.26 -3	1.525	.009	1.05 -3	.008	.014	9.48 -3	2.211	.062
	25	2.779 -3	.699	.018	6.30 -4	1.531	.003	1.15 -3	.014	.008	4.56 -3	2.244	.029
	35	5.867 -4	.713	.004	5.00 -5	1.534	.000	2.76 -4	.020	.001	9.13 -4	2.267	.006
	50	7.119 -5	.717	.001	9.14 -7	1.534	.000	1.19 -5	.022	.000	8.40 -5	2.272	.001
	0	8.492 -2	.000	.717	1.24 0	.000	1.288	2.28 -4	.000	.022	1.33 0	.000	2.027
	1	7.707 -2	.081	.636	4.49 -1	.780	.508	2.09 -4	.000	.021	5.26 -1	.861	1.166
	2	6.978 -2	.154	.563	1.62 -1	1.061	.227	1.88 -4	.000	.021	2.32 -1	1.216	.811
	3	6.303 -2	.221	.497	5.85 -2	1.163	.125	1.60 -4	.001	.021	1.22 -1	1.384	.643
	4	5.680 -2	.280	.437	2.11 -2	1.200	.088	1.45 -4	.001	.021	7.81 -2	1.481	.546
5	5	5.105 -2	.334	.383	7.63 -3	1.213	.075	1.41 -4	.001	.021	5.88 -2	1.548	.479
	10	2.867 -2	.529	.188	4.82 -3	1.240	.049	2.24 -4	.002	.020	3.37 -2	1.771	.257
	15	1.350 -2	.631	.086	4.03 -3	1.262	.026	6.36 -4	.004	.018	1.82 -2	1.897	.130
	20	6.164 -3	.678	.039	2.26 -3	1.280	.009	1.05 -3	.008	.014	9.48 -3	1.965	.062
	25	2.779 -3	.699	.018	6.30 -4	1.286	.003	1.15 -3	.014	.008	4.56 -3	1.999	.029
	35	5.867 -4	.713	.004	5.00 -5	1.288	.000	2.76 -4	.020	.001	9.13 -4	2.021	.006
	50	7.119 -5	.717	.001	9.14 -7	1.288	.000	1.19 -5	.022	.000	8.40 -5	2.027	.001

6	0	8.492 -2	.000	.717	1.03 0	.000	1.120	2.28 -4	.300	.022	1.12 0	.000	1.859
	1	7.707 -2	.081	.636	3.87 -1	.658	.462	2.39 -4	.300	.021	4.64 -1	.739	1.120
	2	6.976 -2	.154	.563	1.45 -1	.905	.215	1.88 -4	.300	.021	2.15 -1	1.060	.799
	3	6.303 -2	.221	.497	5.43 -2	.997	.123	1.60 -4	.301	.021	1.18 -1	1.218	.641
	4	5.680 -2	.280	.437	2.04 -2	1.032	.088	1.45 -4	.301	.021	7.73 -2	1.313	.546
	5	5.105 -2	.334	.383	7.63 -3	1.045	.075	1.41 -4	.301	.021	5.88 -2	1.380	.479
	10	2.867 -2	.529	.188	4.82 -3	1.032	.049	2.24 -4	.302	.020	3.37 -2	1.603	.257
	15	1.350 -2	.631	.086	4.03 -3	1.054	.026	6.36 -4	.304	.018	1.82 -2	1.729	.130
	20	6.164 -3	.678	.039	2.26 -3	1.111	.009	1.05 -3	.308	.014	9.48 -3	1.797	.062
	25	2.779 -3	.699	.018	6.30 -4	1.117	.003	1.15 -3	.314	.008	4.56 -3	1.830	.029
	35	5.867 -4	.713	.004	5.00 -5	1.120	.000	2.76 -4	.320	.001	9.13 -4	1.853	.006
	50	7.119 -5	.717	.001	9.14 -7	1.120	.000	1.19 -5	.322	.000	8.43 -5	1.858	.001
8	0	8.492 -2	.000	.717	7.69 -1	.000	.900	2.28 -4	.300	.022	8.54 -1	.000	1.639
	1	7.707 -2	.081	.636	3.06 -1	.502	.398	2.09 -4	.300	.021	3.83 -1	.583	1.056
	2	6.978 -2	.154	.563	1.21 -1	.702	.199	1.88 -4	.300	.021	1.91 -1	.856	.783
	3	6.303 -2	.221	.497	4.83 -2	.781	.119	1.60 -4	.301	.021	1.11 -1	1.002	.637
	4	5.680 -2	.280	.437	1.92 -2	.812	.088	1.45 -4	.301	.021	7.61 -2	1.093	.546
	5	5.105 -2	.334	.383	7.63 -3	.825	.075	1.41 -4	.301	.021	5.88 -2	1.160	.479
	10	2.867 -2	.529	.188	4.82 -3	.852	.049	2.24 -4	.302	.020	3.37 -2	1.383	.257
	15	1.350 -2	.631	.086	4.03 -3	.874	.026	6.36 -4	.304	.018	1.82 -2	1.509	.130
	20	6.164 -3	.678	.039	2.26 -3	.891	.009	1.05 -3	.308	.014	9.48 -3	1.577	.062
	25	2.779 -3	.699	.018	6.30 -4	.897	.003	1.15 -3	.314	.008	4.56 -3	1.610	.029
	35	5.867 -4	.713	.004	5.00 -5	.900	.000	2.76 -4	.320	.001	9.13 -4	1.633	.006
	50	7.119 -5	.717	.001	9.14 -7	.900	.000	1.19 -5	.322	.000	8.40 -5	1.638	.001
10	0	8.492 -2	.000	.717	6.12 -1	.000	.764	2.28 -4	.300	.022	6.97 -1	.000	1.503
	1	7.707 -2	.081	.636	2.55 -1	.408	.357	2.09 -4	.300	.021	3.32 -1	.489	1.015
	2	6.978 -2	.154	.563	1.06 -1	.577	.187	1.88 -4	.300	.021	1.76 -1	.732	.772
	3	6.303 -2	.221	.497	4.41 -2	.648	.117	1.60 -4	.301	.021	1.07 -1	.869	.635
	4	5.680 -2	.280	.437	1.83 -2	.677	.087	1.45 -4	.301	.021	7.53 -2	.958	.545
	5	5.105 -2	.334	.383	7.63 -3	.689	.075	1.41 -4	.301	.021	5.88 -2	1.024	.479
	10	2.867 -2	.529	.188	4.87 -3	.716	.049	2.24 -4	.302	.020	3.37 -2	1.247	.257
	15	1.350 -2	.631	.086	4.03 -3	.738	.026	6.36 -4	.304	.018	1.82 -2	1.373	.130
	20	6.164 -3	.678	.039	2.26 -3	.756	.009	1.05 -3	.308	.014	9.48 -3	1.442	.062
	25	2.779 -3	.699	.018	6.30 -4	.762	.003	1.15 -3	.314	.008	4.55 -3	1.475	.029
	35	5.867 -4	.713	.004	5.00 -5	.764	.000	2.76 -4	.320	.001	9.13 -4	1.498	.006
	50	7.119 -5	.717	.001	9.14 -7	.764	.000	1.19 -5	.322	.000	8.40 -5	1.503	.001
13	0	8.492 -2	.000	.717	4.67 -1	.000	.633	2.28 -4	.300	.022	5.52 -1	.000	1.372
	1	7.707 -2	.081	.636	2.05 -1	.318	.315	2.09 -4	.300	.021	2.82 -1	.399	.973
	2	6.978 -2	.154	.563	9.00 -2	.458	.175	1.88 -4	.300	.021	1.60 -1	.612	.760
	3	6.303 -2	.221	.497	3.95 -2	.519	.114	1.60 -4	.301	.021	1.03 -1	.740	.632
	4	5.640 -2	.280	.437	1.74 -2	.546	.087	1.45 -4	.301	.021	7.43 -2	.827	.545
	5	5.105 -2	.334	.383	7.63 -3	.558	.075	1.41 -4	.301	.021	5.88 -2	.893	.479
	10	2.867 -2	.529	.188	4.82 -3	.585	.049	2.24 -4	.302	.020	3.37 -2	1.116	.257
	15	1.350 -2	.631	.086	4.03 -3	.607	.026	6.36 -4	.304	.018	1.82 -2	1.242	.130
	20	6.164 -3	.678	.039	2.26 -3	.624	.009	1.05 -3	.308	.014	9.48 -3	1.310	.062
	25	2.779 -3	.699	.018	6.30 -4	.630	.003	1.15 -3	.314	.008	4.56 -3	1.344	.029
	35	5.867 -4	.713	.004	5.00 -5	.633	.000	2.76 -4	.320	.001	9.13 -4	1.366	.006
	50	7.119 -5	.717	.001	9.14 -7	.633	.000	1.19 -5	.322	.000	8.40 -5	1.372	.001

Table 3.6. Parameters at 0.36 Microns

Met. Rge (km) V_m	Alt. (km) h	Rayleigh atten. coeff. (km^{-1}) β_r	Rayleigh optical thick. (0-h) τ_r	Rayleigh optical thick. (h-∞) τ_r'	Aerosol atten. coeff. (km^{-1}) β_p	Aerosol optical thick. (0-h) τ_p	Aerosol optical thick. (h-∞) τ_p'	Ozone absorp. coeff. (km^{-1}) β_3	Ozone optical thick. (0-h) τ_3	Ozone optical thick. (h-∞) τ_3'	Ext. coeff. (km^{-1}) β_{ext}	Ext. optical thick. (0-h) τ_{ext}	Ext. optical thick. (h-∞) τ_{ext}'
2	0	6.678 -2	.000	.564	2.92 0	.000	2.521	6.41 -6	.000	.001	2.98 0	.000	3.086
	1	6.060 -2	.064	.501	8.88 -1	1.706	.815	5.87 -6	.000	.001	9.48 -1	1.769	1.316
	2	5.487 -2	.121	.443	2.70 -1	2.225	.296	5.27 -6	.000	.001	3.25 -1	2.346	.739
	3	4.957 -2	.173	.391	8.23 -2	2.383	.138	4.50 -6	.000	.001	1.32 -1	2.556	.529
	4	4.467 -2	.220	.344	2.50 -2	2.431	.090	4.07 -6	.000	.001	6.97 -2	2.652	.434
	5	4.015 -2	.263	.301	7.63 -3	2.446	.075	3.98 -6	.000	.001	4.78 -2	2.709	.377
	10	2.254 -2	.416	.148	4.82 -3	2.472	.049	6.30 -6	.000	.001	2.74 -2	2.889	.197
	15	1.062 -2	.496	.068	4.03 -3	2.495	.026	1.79 -5	.000	.000	1.47 -2	2.991	.094
	20	4.847 -3	.533	.031	2.26 -3	2.512	.009	2.95 -5	.000	.000	7.14 -3	3.046	.040
	25	2.185 -3	.550	.014	6.30 -4	2.518	.003	3.24 -5	.000	.000	2.85 -3	3.069	.017
	35	4.614 -4	.561	.003	5.00 -5	2.521	.000	7.76 -6	.001	.000	5.19 -4	3.082	.003
	50	5.598 -5	.564	.000	9.14 -7	2.521	.000	3.35 -7	.001	.000	5.72 -5	3.085	.000
3	0	6.678 -2	.000	.564	1.94 0	.000	1.818	6.41 -6	.000	.001	2.00 0	.000	2.383
	1	6.060 -2	.064	.501	6.40 -1	1.172	.646	5.87 -6	.000	.001	7.01 -1	1.235	1.147
	2	5.487 -2	.121	.443	2.11 -1	1.559	.259	5.27 -6	.000	.001	2.66 -1	1.680	.703
	3	4.957 -2	.173	.391	6.99 -2	1.687	.131	4.50 -6	.000	.001	1.19 -1	1.860	.523
	4	4.467 -2	.220	.344	2.31 -2	1.729	.089	4.07 -6	.000	.001	6.78 -2	1.949	.433
	5	4.015 -2	.263	.301	7.63 -3	1.743	.075	3.98 -6	.000	.001	4.78 -2	2.006	.377
	10	2.254 -2	.416	.148	4.82 -3	1.769	.049	6.30 -6	.000	.001	2.74 -2	2.186	.197
	15	1.062 -2	.496	.068	4.03 -3	1.792	.026	1.79 -5	.000	.000	1.47 -2	2.288	.094
	20	4.847 -3	.533	.031	2.26 -3	1.809	.009	2.95 -5	.000	.000	7.14 -3	2.343	.040
	25	2.185 -3	.550	.014	6.30 -4	1.815	.003	3.24 -5	.000	.000	2.85 -3	2.365	.017
	35	4.614 -4	.561	.003	5.00 -5	1.818	.000	7.76 -6	.001	.000	5.19 -4	2.379	.003
	50	5.598 -5	.564	.000	9.14 -7	1.818	.000	3.35 -7	.001	.000	5.72 -5	2.382	.000
4	0	6.678 -2	.000	.564	1.45 0	.000	1.449	6.41 -6	.000	.001	1.52 0	.000	2.014
	1	6.060 -2	.064	.501	5.08 -1	.858	.552	5.87 -6	.000	.001	5.68 -1	.961	1.053
	2	5.487 -2	.171	.443	1.78 -1	1.212	.237	5.27 -6	.000	.001	2.33 -1	1.333	.681
	3	4.957 -2	.173	.391	6.22 -2	1.322	.127	4.50 -6	.000	.001	1.12 -1	1.496	.518
	4	4.467 -2	.220	.344	2.18 -2	1.361	.089	4.07 -6	.000	.001	6.65 -2	1.581	.433
	5	4.015 -2	.263	.301	7.63 -3	1.374	.075	3.98 -6	.000	.001	4.78 -2	1.637	.377
	10	2.254 -2	.416	.148	4.82 -3	1.401	.049	6.30 -6	.000	.001	2.74 -2	1.817	.197
	15	1.062 -2	.496	.068	4.03 -3	1.423	.026	1.79 -5	.000	.000	1.47 -2	1.920	.094
	20	4.847 -3	.533	.031	2.26 -3	1.441	.009	2.95 -5	.000	.000	7.14 -3	1.974	.040
	25	2.185 -3	.550	.014	6.30 -4	1.447	.003	3.24 -5	.000	.000	2.85 -3	1.997	.017
	35	4.614 -4	.561	.003	5.00 -5	1.449	.000	7.76 -6	.001	.000	5.19 -4	2.011	.003
	50	5.598 -5	.564	.000	9.14 -7	1.449	.000	3.35 -7	.001	.000	5.72 -5	2.014	.000
5	0	6.678 -2	.000	.564	1.16 0	.000	1.219	6.41 -6	.000	.001	1.22 0	.000	1.783
	1	6.060 -2	.064	.501	4.23 -1	.729	.489	5.87 -6	.000	.001	4.84 -1	.793	.990
	2	5.487 -2	.121	.443	1.55 -1	.996	.222	5.27 -6	.000	.001	2.10 -1	1.118	.665
	3	4.957 -2	.173	.391	5.68 -2	1.094	.124	4.50 -6	.000	.001	1.06 -1	1.268	.515
	4	4.467 -2	.220	.344	2.08 -2	1.130	.088	4.07 -6	.000	.001	6.55 -2	1.351	.433
	5	4.015 -2	.263	.301	7.63 -3	1.143	.075	3.98 -6	.000	.001	4.78 -2	1.406	.377
	10	2.254 -2	.416	.148	4.82 -3	1.170	.049	6.30 -6	.000	.001	2.74 -2	1.586	.197
	15	1.062 -2	.496	.068	4.03 -3	1.192	.026	1.79 -5	.000	.000	1.47 -2	1.689	.094
	20	4.847 -3	.533	.031	2.26 -3	1.210	.009	2.95 -5	.000	.000	7.14 -3	1.743	.040
	25	2.185 -3	.550	.014	6.30 -4	1.216	.003	3.24 -5	.000	.000	2.85 -3	1.766	.017
	35	4.614 -4	.561	.003	5.00 -5	1.218	.000	7.76 -6	.001	.000	5.19 -4	1.780	.003
	50	5.598 -5	.564	.000	9.14 -7	1.219	.000	3.35 -7	.001	.000	5.72 -5	1.783	.000

6	0	6.678 -2	.000	.564	9.61 -1	.000	1.061	6.41 -6	.000	.001	1.03 0	.000	1.625
	1	6.060 -2	.064	.501	3.65 -1	.616	.445	5.87 -6	.000	.001	4.26 -1	.679	.946
	2	5.487 -2	.121	.443	1.39 -1	.850	.211	5.27 -6	.000	.001	1.94 -1	.971	.654
	3	4.957 -2	.173	.391	5.28 -2	.939	.122	4.50 -6	.000	.001	1.02 -1	1.112	.513
	4	4.467 -2	.220	.344	2.01 -2	.972	.088	4.07 -6	.000	.001	6.47 -2	1.193	.432
	5	4.015 -2	.263	.301	7.63 -3	.985	.075	3.98 -6	.000	.001	4.78 -2	1.248	.377
	10	2.256 -2	.416	.148	4.82 -3	1.012	.049	6.30 -6	.000	.001	2.74 -2	1.428	.197
	15	1.062 -2	.496	.068	4.03 -3	1.034	.026	1.79 -5	.000	.000	1.47 -2	1.531	.094
	20	4.847 -3	.533	.031	2.26 -3	1.052	.009	2.95 -5	.000	.000	7.14 -3	1.585	.040
	25	2.185 -3	.550	.014	6.30 -4	1.058	.003	3.24 -5	.000	.000	2.85 -3	1.608	.017
	35	4.614 -4	.561	.003	5.00 -5	1.060	.000	7.76 -6	.001	.000	5.19 -4	1.622	.003
	50	5.598 -5	.564	.000	9.14 -7	1.061	.000	3.35 -7	.001	.000	5.72 -5	1.625	.000
8	0	6.678 -2	.000	.564	7.14 -1	.000	.854	6.41 -6	.000	.001	7.81 -1	.000	1.418
	1	6.060 -2	.064	.501	2.88 -1	.470	.384	5.87 -6	.000	.001	3.49 -1	.533	.885
	2	5.487 -2	.121	.443	1.16 -1	.659	.195	5.27 -6	.000	.001	1.71 -1	.780	.638
	3	4.957 -2	.173	.391	4.69 -2	.735	.118	4.50 -6	.000	.001	9.64 -2	.909	.510
	4	4.467 -2	.220	.344	1.89 -2	.766	.088	4.07 -6	.000	.001	6.36 -2	.987	.432
	5	4.015 -2	.263	.301	7.63 -3	.778	.075	3.98 -6	.000	.001	4.78 -2	1.041	.377
	10	2.256 -2	.416	.148	4.82 -3	.805	.049	6.30 -6	.000	.001	2.74 -2	1.221	.197
	15	1.062 -2	.496	.068	4.03 -3	.827	.026	1.79 -5	.000	.000	1.47 -2	1.324	.094
	20	4.847 -3	.533	.031	2.26 -3	.845	.009	2.95 -5	.000	.000	7.14 -3	1.378	.040
	25	2.185 -3	.550	.014	6.30 -4	.851	.003	3.24 -5	.000	.000	2.85 -3	1.401	.017
	35	4.614 -4	.561	.003	5.00 -5	.853	.000	7.76 -6	.001	.000	5.19 -4	1.415	.003
	50	5.598 -5	.564	.000	9.14 -7	.854	.000	3.35 -7	.001	.000	5.72 -5	1.418	.000
10	0	6.678 -2	.000	.564	5.69 -1	.000	.726	6.41 -6	.000	.001	6.36 -1	.000	1.291
	1	6.060 -2	.064	.501	2.40 -1	.381	.345	5.87 -6	.000	.001	3.01 -1	.445	.846
	2	5.487 -2	.121	.443	1.01 -1	.542	.184	5.27 -6	.000	.001	1.56 -1	.663	.627
	3	4.957 -2	.173	.391	4.28 -2	.610	.116	4.50 -6	.000	.001	9.24 -2	.783	.507
	4	4.467 -2	.220	.344	1.81 -2	.639	.087	4.07 -6	.000	.001	6.27 -2	.859	.432
	5	4.015 -2	.263	.301	7.63 -3	.651	.075	3.98 -6	.000	.001	4.78 -2	.914	.377
	10	2.256 -2	.416	.148	4.82 -3	.677	.049	6.30 -6	.000	.001	2.74 -2	1.094	.197
	15	1.062 -2	.496	.068	4.03 -3	.700	.026	1.79 -5	.000	.000	1.47 -2	1.196	.094
	20	4.847 -3	.533	.031	2.26 -3	.717	.009	2.95 -5	.000	.000	7.14 -3	1.251	.040
	25	2.185 -3	.550	.014	6.30 -4	.723	.003	3.24 -5	.000	.000	2.85 -3	1.274	.017
	35	4.614 -4	.561	.003	5.00 -5	.726	.000	7.76 -6	.001	.000	5.19 -4	1.287	.003
	50	5.598 -5	.564	.000	9.14 -7	.726	.000	3.35 -7	.001	.000	5.72 -5	1.290	.000
13	0	6.678 -2	.000	.564	4.34 -1	.000	.602	6.41 -6	.000	.001	5.01 -1	.000	1.167
	1	6.060 -2	.064	.501	1.93 -1	.298	.305	5.87 -6	.000	.001	2.54 -1	.361	.806
	2	5.487 -2	.121	.443	8.62 -2	.430	.172	5.27 -6	.000	.001	1.41 -1	.551	.616
	3	4.957 -2	.173	.391	3.84 -2	.489	.113	4.50 -6	.000	.001	8.80 -2	.663	.505
	4	4.467 -2	.220	.344	1.71 -2	.516	.087	4.07 -6	.000	.001	6.18 -2	.736	.431
	5	4.015 -2	.263	.301	7.63 -3	.527	.075	3.98 -6	.000	.001	4.78 -2	.790	.377
	10	2.256 -2	.416	.148	4.82 -3	.554	.049	6.30 -6	.000	.001	2.74 -2	.970	.197
	15	1.062 -2	.496	.068	4.03 -3	.576	.026	1.79 -5	.000	.000	1.47 -2	1.073	.094
	20	4.847 -3	.533	.031	2.26 -3	.594	.009	2.95 -5	.000	.000	7.14 -3	1.127	.040
	25	2.185 -3	.550	.014	6.30 -4	.600	.003	3.24 -5	.000	.000	2.85 -3	1.150	.017
	35	4.614 -4	.561	.003	5.00 -5	.602	.000	7.76 -6	.001	.000	5.19 -4	1.164	.003
	50	5.598 -5	.564	.000	9.14 -7	.602	.000	3.35 -7	.001	.000	5.72 -5	1.167	.000

Table 3.7. Parameters at 0.38 Microns

Met. Rge (km) V_n	Alt. (km) h	Rayleigh atten. coeff. (km^{-1}) β_r	Rayleigh optical thick. (0-h) τ_r	Rayleigh optical thick. (h-∞) τ'_r	Aerosol atten. coeff. (km^{-1}) β_p	Aerosol optical thick. (0-h) τ_p	Aerosol optical thick. (h-∞) τ'_p	Ozone absorp. coeff. (km^{-1}) β_3	Ozone optical thick. (0-h) τ_3	Ozone optical thick. (h-∞) τ'_3	Ext. coeff. (km^{-1}) β_{ext}	Ext. optical thick. (0-h) τ_{ext}	Ext. optical thick. (h-∞) τ'_{ext}
2	0	5.327 -2	.000	.450	2.82 0	.000	2.431	0.	.000	.000	2.87 0	.000	2.881
	1	4.654 -2	.051	.399	8.56 -1	1.646	.785	0.	.000	.000	9.06 -1	1.697	1.184
	2	4.377 -2	.097	.353	2.60 -1	2.146	.285	0.	.000	.000	3.04 -1	2.243	.638
	3	3.956 -2	.136	.312	7.91 -2	2.296	.132	0.	.000	.000	1.19 -1	2.437	.444
	4	3.563 -2	.176	.274	2.40 -2	2.345	.086	0.	.000	.000	5.97 -2	2.521	.360
	5	3.202 -2	.210	.240	7.31 -3	2.359	.072	0.	.000	.000	3.93 -2	2.569	.312
	10	1.798 -2	.332	.118	4.61 -3	2.386	.046	0.	.000	.000	2.26 -2	2.718	.164
	15	8.469 -3	.396	.054	3.86 -3	2.406	.025	0.	.000	.000	1.23 -2	2.801	.079
	20	3.866 -3	.425	.025	2.17 -3	2.422	.008	0.	.000	.000	6.04 -3	2.847	.033
	25	1.743 -3	.439	.011	6.04 -4	2.428	.003	0.	.000	.000	2.35 -3	2.867	.014
	35	3.640 -4	.447	.003	4.79 -5	2.430	.000	0.	.000	.000	4.15 -4	2.878	.003
	50	4.465 -5	.450	.000	8.76 -7	2.431	.000	0.	.000	.000	4.55 -5	2.881	.000
3	0	5.327 -2	.000	.450	1.87 0	.000	1.752	0.	.000	.000	1.92 0	.000	2.202
	1	4.654 -2	.051	.399	6.17 -1	1.131	.622	0.	.000	.000	6.64 -1	1.182	1.021
	2	4.377 -2	.097	.353	2.04 -1	1.503	.249	0.	.000	.000	2.47 -1	1.600	.602
	3	3.956 -2	.136	.312	9.72 -2	1.626	.126	0.	.000	.000	1.37 -1	1.762	.438
	4	3.563 -2	.176	.274	2.22 -2	1.667	.085	0.	.000	.000	5.78 -2	1.843	.359
	5	3.202 -2	.210	.240	7.31 -3	1.680	.072	0.	.000	.000	3.93 -2	1.890	.312
	10	1.798 -2	.332	.118	4.61 -3	1.706	.046	0.	.000	.000	2.26 -2	2.038	.164
	15	8.469 -3	.396	.054	3.86 -3	1.727	.025	0.	.000	.000	1.23 -2	2.123	.079
	20	3.866 -3	.425	.025	2.17 -3	1.744	.008	0.	.000	.000	6.04 -3	2.169	.033
	25	1.743 -3	.439	.011	6.04 -4	1.750	.003	0.	.000	.000	2.35 -3	2.189	.014
	35	3.640 -4	.447	.003	4.79 -5	1.752	.000	0.	.000	.000	4.15 -4	2.199	.003
	50	4.465 -5	.450	.000	8.76 -7	1.752	.000	0.	.000	.000	4.55 -5	2.202	.000
4	0	5.327 -2	.000	.450	1.40 0	.000	1.397	0.	.000	.000	1.45 0	.000	1.847
	1	4.654 -2	.051	.399	4.89 -1	.866	.531	0.	.000	.000	5.36 -1	.917	.930
	2	4.377 -2	.097	.353	1.71 -1	1.169	.228	0.	.000	.000	2.15 -1	1.266	.581
	3	3.956 -2	.136	.312	5.98 -2	1.275	.122	0.	.000	.000	9.94 -2	1.411	.434
	4	3.563 -2	.176	.274	2.09 -2	1.312	.085	0.	.000	.000	5.65 -2	1.488	.359
	5	3.202 -2	.210	.240	7.31 -3	1.325	.072	0.	.000	.000	3.93 -2	1.535	.312
	10	1.798 -2	.332	.118	4.61 -3	1.351	.046	0.	.000	.000	2.26 -2	1.683	.164
	15	8.469 -3	.396	.054	3.86 -3	1.372	.025	0.	.000	.000	1.23 -2	1.768	.079
	20	3.866 -3	.425	.025	2.17 -3	1.389	.008	0.	.000	.000	6.04 -3	1.814	.033
	25	1.743 -3	.439	.011	6.04 -4	1.395	.003	0.	.000	.000	2.35 -3	1.834	.014
	35	3.640 -4	.447	.003	4.79 -5	1.397	.000	0.	.000	.000	4.15 -4	1.844	.003
	50	4.465 -5	.450	.000	8.76 -7	1.397	.000	0.	.000	.000	4.55 -5	1.847	.000
5	0	5.327 -2	.000	.450	1.12 0	.000	1.174	0.	.000	.000	1.17 0	.000	1.624
	1	4.654 -2	.051	.399	4.08 -1	.703	.471	0.	.000	.000	4.55 -1	.754	.870
	2	4.377 -2	.097	.353	1.49 -1	.961	.213	0.	.000	.000	1.93 -1	1.058	.566
	3	3.956 -2	.136	.312	5.46 -2	1.055	.119	0.	.000	.000	9.42 -2	1.191	.431
	4	3.563 -2	.176	.274	2.03 -2	1.090	.085	0.	.000	.000	5.59 -2	1.266	.359
	5	3.202 -2	.210	.240	7.31 -3	1.102	.072	0.	.000	.000	3.93 -2	1.312	.312
	10	1.798 -2	.332	.118	4.61 -3	1.128	.046	0.	.000	.000	2.26 -2	1.460	.164
	15	8.469 -3	.396	.054	3.86 -3	1.149	.025	0.	.000	.000	1.23 -2	1.545	.079
	20	3.866 -3	.425	.025	2.17 -3	1.166	.008	0.	.000	.000	6.04 -3	1.591	.033
	25	1.743 -3	.439	.011	6.04 -4	1.172	.003	0.	.000	.000	2.35 -3	1.611	.014
	35	3.640 -4	.447	.003	4.79 -5	1.174	.000	0.	.000	.000	4.15 -4	1.622	.003
	50	4.465 -5	.450	.000	8.76 -7	1.174	.000	0.	.000	.000	4.55 -5	1.624	.000

6	0	5.327 -2	.000	.450	9.28 -1	[illegible]	1.022	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.472
	1	4.836 -2	.051	.399	3.52 -1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	2	4.377 -2	.097	.353	1.36 -1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	3	3.956 -2	.138	.312	5.27 -2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	4	3.563 -2	.176	.276	1.93 -2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	5	3.202 -2	.216	.240	7.34 -3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	10	1.798 -2	.332	.118	4.44 -3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	15	8.469 -3	.396	.056	3.06 -3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	20	3.866 -3	.425	.025	2.17 -3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	25	1.743 -3	.439	.011	6.26 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	35	3.608 -4	.447	.003	4.79 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	50	4.465 -5	.450	.000	8.76 -7	1.022	[illegible]	[illegible]	[illegible]	[illegible]	4.95 -5	[illegible]	[illegible]	[illegible]
8	0	5.327 -2	.000	.450	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.272
	1	4.836 -2	.051	.399	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	2	4.377 -2	.097	.353	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	3	3.956 -2	.138	.312	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	4	3.563 -2	.176	.276	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	5	3.202 -2	.216	.240	7.34 -3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	10	1.798 -2	.332	.118	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	15	8.469 -3	.396	.056	3.06 -3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	20	3.866 -3	.425	.025	2.17 -3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	25	1.743 -3	.439	.011	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	35	3.608 -4	.447	.003	4.79 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	50	4.465 -5	.450	.000	8.76 -7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4.95 -5	[illegible]	1.272	[illegible]
10	0	5.327 -2	.000	.450	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	1	4.836 -2	.051	.399	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	2	4.377 -2	.097	.353	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	3	3.956 -2	.138	.312	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	4	3.563 -2	.176	.276	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	5	3.202 -2	.216	.240	7.34 -3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	10	1.798 -2	.332	.118	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	15	8.469 -3	.396	.056	3.06 -3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	20	3.866 -3	.425	.025	2.17 -3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	25	1.743 -3	.439	.011	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	35	3.608 -4	.447	.003	4.79 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	50	4.465 -5	.450	.000	8.76 -7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4.95 -5	[illegible]	[illegible]	[illegible]
13	0	5.327 -2	.000	.450	4.19 -1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	1	4.836 -2	.051	.399	1.06 -1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	2	4.377 -2	.097	.353	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	3	3.956 -2	.138	.312	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	4	3.563 -2	.176	.276	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	5	3.202 -2	.216	.240	7.31 -3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	10	1.798 -2	.332	.118	4.61 -3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	15	8.469 -3	.396	.054	3.06 -3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	20	3.866 -3	.425	.025	2.17 -3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	25	1.743 -3	.430	.011	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	35	3.608 -4	.447	.003	4.79 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	50	4.465 -5	.450	.000	8.76 -7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4.95 -5	[illegible]	[illegible]	[illegible]

Table 3.8. Parameters at 0.40 Microns

Met. Rge (km) V_n	Alt. (km) h	Rayleigh atten. coeff. (km^{-1}) β_r	Rayleigh optical thick. (0-h) τ_r	Rayleigh optical thick. (h-∞) τ'_r	Aerosol atten. coeff. (km^{-1}) β_p	Aerosol optical thick. (0-h) τ_p	Aerosol optical thick. (h-∞) τ'_p	Ozone absorp. coeff. (km^{-1}) β_3	Ozone optical thick. (0-h) τ_3	Ozone optical thick. (h-∞) τ'_3	Ext. coeff. (km^{-1}) β_{ext}	Ext. optical thick. (0-h) τ_{ext}	Ext. optical thick. (h-∞) τ'_{ext}
	0	4.403 -2	.000	.364	2.61 0	.000	2.229	0.	.000	.000	2.65 0	.000	2.593
	1	3.905 -2	.041	.323	7.84 -1	1.520	.709	0.	.000	.000	8.24 -1	1.561	1.031
	2	3.546 -2	.078	.285	2.35 -1	1.976	.253	0.	.000	.000	2.71 -1	2.055	.538
	3	3.196 -2	.112	.252	7.06 -2	2.113	.116	0.	.000	.000	1.03 -1	2.225	.368
	4	2.878 -2	.142	.221	2.12 -2	2.154	.075	0.	.000	.000	5.00 -2	2.296	.296
2	5	2.587 -2	.169	.194	6.35 -3	2.167	.063	0.	.000	.000	3.22 -2	2.336	.257
	10	1.453 -2	.268	.095	4.01 -3	2.189	.040	0.	.000	.000	1.85 -2	2.457	.136
	15	6.841 -3	.320	.044	3.35 -3	2.207	.022	0.	.000	.000	1.02 -2	2.527	.065
	20	3.123 -3	.344	.020	1.89 -3	2.222	.007	0.	.000	.000	5.01 -3	2.566	.027
	25	1.408 -3	.354	.009	5.25 -4	2.227	.002	0.	.000	.000	1.93 -3	2.581	.011
	35	2.973 -4	.361	.002	4.16 -5	2.229	.000	0.	.000	.000	3.39 -4	2.590	.002
	50	3.607 -5	.363	.000	7.62 -7	2.229	.000	0.	.000	.000	3.68 -5	2.592	.000
	0	4.403 -2	.000	.364	1.74 0	.000	1.605	0.	.000	.000	1.78 0	.000	1.969
	1	3.905 -2	.041	.323	5.66 -1	1.044	.561	0.	.000	.000	6.05 -1	1.085	.884
	2	3.546 -2	.078	.285	1.86 -1	1.384	.221	0.	.000	.000	2.20 -1	1.462	.506
	3	3.196 -2	.112	.252	6.00 -2	1.495	.110	0.	.000	.000	9.19 -2	1.607	.362
	4	2.878 -2	.142	.221	1.95 -2	1.531	.074	0.	.000	.000	4.83 -2	1.673	.296
3	5	2.587 -2	.169	.194	6.35 -3	1.543	.063	0.	.000	.000	3.22 -2	1.712	.257
	10	1.453 -2	.268	.095	4.01 -3	1.565	.040	0.	.000	.000	1.85 -2	1.833	.136
	15	6.841 -3	.320	.044	3.35 -3	1.583	.022	0.	.000	.000	1.02 -2	1.903	.065
	20	3.123 -3	.344	.020	1.89 -3	1.598	.007	0.	.000	.000	5.01 -3	1.942	.027
	25	1.408 -3	.354	.009	5.25 -4	1.603	.002	0.	.000	.000	1.93 -3	1.957	.011
	35	2.973 -4	.361	.002	4.16 -5	1.605	.000	0.	.000	.000	3.39 -4	1.966	.002
	50	3.607 -5	.363	.000	7.62 -7	1.605	.000	0.	.000	.000	3.68 -5	1.968	.000
	0	4.403 -2	.000	.364	1.30 0	.000	1.278	0.	.000	.000	1.34 0	.000	1.642
	1	3.905 -2	.041	.323	4.49 -1	.800	.478	0.	.000	.000	4.88 -1	.841	.801
	2	3.546 -2	.078	.285	1.55 -1	1.076	.202	0.	.000	.000	1.90 -1	1.154	.487
	3	3.196 -2	.112	.252	5.34 -2	1.171	.107	0.	.000	.000	8.53 -2	1.283	.359
	4	2.878 -2	.142	.221	1.84 -2	1.204	.074	0.	.000	.000	4.72 -2	1.346	.295
4	5	2.587 -2	.169	.194	6.35 -3	1.216	.063	0.	.000	.000	3.22 -2	1.385	.257
	10	1.453 -2	.268	.095	4.01 -3	1.238	.040	0.	.000	.000	1.85 -2	1.506	.136
	15	6.841 -3	.320	.044	3.35 -3	1.256	.022	0.	.000	.000	1.02 -2	1.576	.065
	20	3.123 -3	.344	.020	1.89 -3	1.271	.007	0.	.000	.000	5.01 -3	1.615	.027
	25	1.408 -3	.354	.009	5.25 -4	1.276	.002	0.	.000	.000	1.93 -3	1.630	.011
	35	2.973 -4	.361	.002	4.16 -5	1.278	.000	0.	.000	.000	3.39 -4	1.640	.002
	50	3.607 -5	.363	.000	7.62 -7	1.278	.000	0.	.000	.000	3.68 -5	1.641	.000
	0	4.403 -2	.000	.364	1.04 0	.000	1.073	0.	.000	.000	1.08 0	.000	1.437
	1	3.905 -2	.041	.323	3.74 -1	.650	.424	0.	.000	.000	4.13 -1	.691	.746
	2	3.546 -2	.078	.285	1.35 -1	.885	.189	0.	.000	.000	1.70 -1	.963	.474
	3	3.196 -2	.112	.252	4.88 -2	.969	.104	0.	.000	.000	8.07 -2	1.081	.356
	4	2.878 -2	.142	.221	1.76 -2	1.000	.074	0.	.000	.000	4.64 -2	1.142	.295
5	5	2.587 -2	.169	.194	6.35 -3	1.011	.063	0.	.000	.000	3.22 -2	1.180	.257
	10	1.453 -2	.268	.095	4.01 -3	1.033	.040	0.	.000	.000	1.85 -2	1.301	.136
	15	6.841 -3	.320	.044	3.35 -3	1.052	.022	0.	.000	.000	1.02 -2	1.372	.065
	20	3.123 -3	.344	.020	1.89 -3	1.066	.007	0.	.000	.000	5.01 -3	1.413	.027
	25	1.408 -3	.354	.009	5.25 -4	1.071	.002	0.	.000	.000	1.93 -3	1.426	.011
	35	2.973 -4	.361	.002	4.16 -5	1.073	.000	0.	.000	.000	3.39 -4	1.435	.002
	50	3.607 -5	.363	.000	7.62 -7	1.073	.000	0.	.000	.000	3.68 -5	1.437	.000

	0	4.303 -2	.000	.364	8.61 -1	.000	.933	0.	.300	.000	9.06 -1	.000	1.297
	1	3.905 -2	.041	.323	3.23 -1	.549	.385	0.	.300	.000	3.62 -1	.590	.707
	2	3.536 -2	.078	.285	1.21 -1	.754	.179	0.	.300	.000	1.56 -1	.832	.465
	3	3.194 -2	.112	.252	4.53 -2	.831	.102	0.	.300	.000	7.72 -2	.943	.354
	4	2.878 -2	.142	.221	1.70 -2	.860	.073	0.	.300	.000	4.57 -2	1.002	.295
	5	2.587 -2	.169	.194	6.35 -3	.871	.063	0.	.300	.000	3.22 -2	1.040	.257
6	10	1.453 -2	.268	.095	4.01 -3	.893	.040	0.	.300	.000	1.85 -2	1.161	.136
	15	6.841 -3	.320	.044	3.35 -3	.912	.022	0.	.300	.000	1.02 -2	1.231	.065
	20	3.123 -3	.344	.020	1.89 -3	.926	.007	0.	.300	.000	5.01 -3	1.270	.027
	25	1.408 -3	.354	.009	5.25 -4	.931	.002	0.	.300	.000	1.93 -3	1.285	.011
	35	2.973 -4	.361	.002	4.16 -5	.933	.000	0.	.300	.000	3.39 -4	1.295	.002
	50	3.607 -5	.363	.000	7.62 -7	.933	.000	0.	.300	.000	3.68 -5	1.297	.000
	0	4.303 -2	.000	.364	6.41 -1	.000	.750	0.	.300	.000	6.84 -1	.000	1.114
	1	3.905 -2	.041	.323	2.55 -1	.418	.332	0.	.300	.000	2.94 -1	.459	.654
	2	3.536 -2	.078	.285	1.01 -1	.585	.165	0.	.300	.000	1.37 -1	.663	.451
	3	3.194 -2	.112	.252	4.02 -2	.651	.099	0.	.300	.000	7.22 -2	.762	.351
	4	2.878 -2	.142	.221	1.60 -2	.677	.073	0.	.300	.000	4.48 -2	.819	.295
8	5	2.587 -2	.169	.194	6.35 -3	.687	.063	0.	.300	.000	3.22 -2	.857	.257
	10	1.453 -2	.268	.095	4.01 -3	.710	.040	0.	.300	.000	1.85 -2	.978	.136
	15	6.841 -3	.320	.044	3.35 -3	.728	.022	0.	.300	.000	1.02 -2	1.048	.065
	20	3.123 -3	.344	.020	1.89 -3	.743	.007	0.	.300	.000	5.01 -3	1.086	.027
	25	1.408 -3	.354	.009	5.25 -4	.748	.002	0.	.300	.000	1.93 -3	1.102	.011
	35	2.973 -4	.361	.002	4.16 -5	.750	.000	0.	.300	.000	3.39 -4	1.111	.002
	50	3.607 -5	.363	.000	7.62 -7	.750	.000	0.	.300	.000	3.68 -5	1.113	.000
	0	4.303 -2	.000	.364	5.10 -1	.000	.637	0.	.300	.000	5.53 -1	.000	1.000
	1	3.905 -2	.041	.323	2.12 -1	.340	.297	0.	.300	.000	2.51 -1	.381	.620
	2	3.536 -2	.078	.285	8.83 -2	.481	.156	0.	.300	.000	1.24 -1	.559	.441
	3	3.194 -2	.112	.252	3.67 -2	.540	.097	0.	.300	.000	6.87 -2	.651	.349
10	4	2.878 -2	.142	.221	1.53 -2	.564	.073	0.	.300	.000	4.41 -2	.706	.294
	5	2.587 -2	.169	.194	6.35 -3	.574	.063	0.	.300	.000	3.22 -2	.744	.257
	10	1.453 -2	.268	.095	4.01 -3	.597	.040	0.	.300	.000	1.85 -2	.865	.136
	15	6.841 -3	.320	.044	3.35 -3	.615	.022	0.	.300	.000	1.02 -2	.935	.065
	20	3.123 -3	.344	.020	1.89 -3	.630	.007	0.	.300	.000	5.01 -3	.973	.027
	25	1.408 -3	.354	.009	5.25 -4	.635	.002	0.	.300	.000	1.93 -3	.989	.011
	35	2.973 -4	.361	.002	4.16 -5	.637	.000	0.	.300	.000	3.39 -4	.998	.002
	50	3.607 -5	.363	.000	7.62 -7	.637	.000	0.	.300	.000	3.68 -5	1.000	.000
	0	4.303 -2	.000	.364	3.89 -1	.000	.528	0.	.300	.000	4.32 -1	.000	.891
	1	3.905 -2	.041	.323	1.71 -1	.265	.263	0.	.300	.000	2.10 -1	.306	.585
	2	3.536 -2	.078	.285	7.50 -2	.381	.146	0.	.300	.000	1.10 -1	.460	.431
	3	3.194 -2	.112	.252	3.29 -2	.433	.095	0.	.300	.000	6.49 -2	.544	.347
	4	2.878 -2	.142	.221	1.45 -2	.455	.073	0.	.300	.000	4.33 -2	.597	.294
13	5	2.587 -2	.169	.194	6.35 -3	.465	.063	0.	.300	.000	3.22 -2	.634	.257
	10	1.453 -2	.268	.095	4.01 -3	.487	.040	0.	.300	.000	1.85 -2	.755	.136
	15	6.841 -3	.320	.044	3.35 -3	.506	.022	0.	.300	.000	1.02 -2	.826	.065
	20	3.123 -3	.344	.020	1.89 -3	.520	.007	0.	.300	.000	5.01 -3	.864	.027
	25	1.408 -3	.354	.009	5.25 -4	.525	.002	0.	.300	.000	1.93 -3	.880	.011
	35	2.973 -4	.361	.002	4.16 -5	.527	.000	0.	.300	.000	3.39 -4	.889	.002
	50	3.607 -5	.363	.000	7.62 -7	.528	.000	0.	.300	.000	3.68 -5	.891	.000

Table 3.9. Parameters at 0.45 Microns

Met. Rge (km) V_n	Alt. (km) h	Rayleigh atten. coeff. (km^{-1}) β_r	Rayleigh optical thick. (0-h) τ_r	Rayleigh optical thick. (h-∞) τ_r'	Aerosol atten. coeff. (km^{-1}) β_p	Aerosol optical thick. (0-h) τ_p	Aerosol optical thick. (h-∞) τ_p'	Ozone absorp. coeff. (km^{-1}) β_3	Ozone optical thick. (0-h) τ_3	Ozone optical thick. (h-∞) τ_3'	Ext. coeff. (km^{-1}) β_{ext}	Ext. optical thick. (0-h) τ_{ext}	Ext. optical thick. (h-∞) τ_{ext}'
2	0	2.644 -2	.000	.223	2.31 0	.000	1.978	1.25 -5	.300	.001	2.34 0	.000	2.203
	1	2.400 -2	.025	.198	6.96 -1	1.347	.632	1.14 -5	.300	.001	7.20 -1	1.372	.831
	2	2.173 -2	.048	.175	2.10 -1	1.752	.226	1.03 -5	.300	.001	2.31 -1	1.800	.403
	3	1.963 -2	.069	.155	6.31 -2	1.874	.104	8.75 -6	.300	.001	8.27 -2	1.943	.260
	4	1.769 -2	.087	.136	1.90 -2	1.911	.067	7.91 -6	.300	.001	3.67 -2	1.998	.205
	5	1.590 -2	.104	.119	5.72 -3	1.922	.056	7.73 -6	.300	.001	2.16 -2	2.025	.177
	10	8.926 -3	.165	.059	3.61 -3	1.942	.036	1.22 -5	.300	.001	1.25 -2	2.107	.096
	15	4.704 -3	.197	.027	3.02 -3	1.959	.020	3.48 -5	.300	.001	7.26 -3	2.156	.047
	20	1.919 -3	.211	.012	1.70 -3	1.972	.007	5.74 -5	.300	.001	3.67 -3	2.183	.020
	25	8.652 -4	.218	.006	4.73 -4	1.976	.002	6.30 -5	.301	.000	1.40 -3	2.195	.008
	35	1.827 -4	.222	.001	3.75 -5	1.978	.000	1.51 -5	.301	.000	2.35 -4	2.201	.001
	50	2.217 -5	.223	.000	6.86 -7	1.978	.000	6.51 -7	.301	.000	2.35 -5	2.203	.000
3	0	2.644 -2	.000	.223	1.54 0	.000	1.425	1.25 -5	.300	.001	1.56 0	.000	1.650
	1	2.400 -2	.025	.198	5.02 -1	.925	.500	1.14 -5	.300	.001	5.26 -1	.950	.699
	2	2.173 -2	.048	.175	1.64 -1	1.227	.198	1.03 -5	.300	.001	1.8[illegible] -1	1.275	.374
	3	1.963 -2	.069	.155	5.36 -2	1.326	.099	8.75 -6	.300	.001	7.32 -2	1.395	.255
	4	1.769 -2	.087	.136	1.75 -2	1.358	.067	7.91 -6	.300	.001	3.52 -2	1.445	.204
	5	1.590 -2	.104	.119	5.72 -3	1.369	.056	7.73 -6	.300	.00[illegible]	2.16 -2	1.473	.177
	10	8.926 -3	.165	.059	3.61 -3	1.389	.036	1.22 -5	.300	.001	1.25 -2	1.554	.096
	15	4.704 -3	.197	.027	3.02 -3	1.405	.020	3.48 -5	.300	.001	7.26 -3	1.602	.047
	20	1.919 -3	.211	.012	1.70 -3	1.419	.007	5.74 -5	.300	.001	3.67 -3	1.630	.020
	25	8.652 -4	.218	.006	4.73 -4	1.423	.002	6.30 -5	.301	.000	1.40 -3	1.642	.008
	35	1.827 -4	.222	.001	3.75 -5	1.425	.000	1.51 -5	.301	.000	2.35 -4	1.648	.001
	50	2.217 -5	.223	.000	6.86 -7	1.425	.000	6.51 -7	.301	.000	2.35 -5	1.649	.000
4	0	2.644 -2	.000	.223	1.15 0	.000	1.135	1.25 -5	.300	.001	1.18 0	.000	1.360
	1	2.400 -2	.025	.198	3.98 -1	.769	.426	1.14 -5	.300	.001	4.22 -1	.734	.626
	2	2.173 -2	.048	.175	1.38 -1	.954	.181	1.03 -5	.300	.001	1.60 -1	1.002	.357
	3	1.963 -2	.069	.155	4.77 -2	1.039	.096	8.75 -6	.300	.001	6.74 -2	1.108	.252
	4	1.769 -2	.087	.136	1.65 -2	1.069	.067	7.91 -6	.300	.001	3.42 -2	1.156	.204
	5	1.590 -2	.104	.119	5.72 -3	1.0[illegible]9	.056	7.73 -6	.300	.001	2.16 -2	1.183	.177
	10	8.926 -3	.165	.059	3.61 -3	1.099	.036	1.22 -5	.300	.001	1.25 -2	1.264	.096
	15	4.704 -3	.197	.027	3.02 -3	1.116	.020	3.48 -5	.300	.001	7.26 -3	1.312	.047
	20	1.919 -3	.211	.012	1.70 -3	1.129	.007	5.74 -5	.300	.001	3.67 -3	1.340	.020
	25	8.652 -4	.218	.006	4.73 -4	1.133	.002	6.30 -5	.301	.000	1.40 -3	1.352	.008
	35	1.827 -4	.222	.001	3.75 -5	1.135	.000	1.51 -5	.301	.000	2.35 -4	1.358	.001
	50	[illegible] -5	.223	.000	6.86 -7	1.135	.000	6.51 -7	.301	.000	2.35 -5	1.360	.000
5	0	[illegible] -2	.000	.223	9.17 -1	.000	.954	1.25 -5	.300	.001	9.43 -1	.000	1.178
	1	2.400 -2	.025	.198	3.32 -1	.576	.378	1.14 -5	.300	.001	3.56 -1	.601	.577
	2	2.173 -2	.048	.175	1.20 -1	.784	.169	1.03 -5	.000	.001	1.42 -1	.832	.346
	3	1.963 -2	.069	.155	4.36 -2	.860	.094	8.75 -6	.300	.001	6.32 -2	.929	.250
	4	1.769 -2	.087	.136	1.58 -2	.887	.066	7.91 -6	.300	.001	3.35 -2	.975	.204
	5	1.590 -2	.104	.119	5.72 -3	.857	.056	7.73 -6	.300	.001	2.16 -2	1.001	.177
	10	8.926 -3	.165	.059	3.61 -3	.917	.036	1.22 -5	.300	.001	1.25 -2	1.082	.096
	15	4.704 -3	.197	.027	3.02 -3	.934	.020	3.48 -5	.300	.001	7.26 -3	1.131	.047
	20	1.919 -3	.211	.012	1.70 -3	.947	.007	5.74 -5	.300	.001	3.67 -3	1.159	.020
	25	8.652 -4	.218	.006	4.73 -4	.952	.002	6.30 -5	.301	.000	1.40 -3	1.170	.008
	35	1.827 -4	.222	.001	3.75 -5	.953	.000	1.51 -5	.301	.000	2.35 -4	1.177	.001
	50	2.217 -5	.223	.000	6.86 -7	.954	.000	6.51 -7	.301	.000	2.35 -5	1.178	.000

6	0	2.644 -2	.000	.223	7.62 -1	.000	.829	1.25 -5	.000	.001	7.88 -1	.000	1.054
	1	2.400 -2	.025	.198	2.86 -1	.486	.343	1.14 -5	.000	.001	3.10 -1	.511	.543
	2	2.173 -2	.048	.175	1.08 -1	.669	.161	1.03 -5	.000	.001	1.29 -1	.717	.337
	3	1.963 -2	.069	.155	4.05 -2	.757	.092	8.75 -6	.000	.001	6.01 -2	.806	.248
	4	1.769 -2	.087	.136	1.52 -2	.763	.066	7.91 -6	.000	.001	3.29 -2	.851	.203
	5	1.590 -2	.104	.119	5.72 -3	.773	.056	7.73 -6	.000	.001	2.16 -2	.877	.177
	10	8.926 -3	.165	.059	3.61 -3	.753	.036	1.22 -5	.000	.001	1.25 -2	.958	.096
	15	4.704 -3	.197	.027	3.02 -3	.810	.020	3.48 -5	.000	.001	7.26 -3	1.006	.047
	20	1.919 -3	.211	.012	1.70 -3	.823	.007	5.74 -5	.000	.001	3.67 -3	1.034	.020
	25	8.652 -4	.218	.006	4.73 -4	.827	.002	6.30 -5	.001	.000	1.40 -3	1.046	.008
	35	1.827 -4	.222	.001	3.75 -5	.829	.000	1.51 -5	.001	.000	2.35 -4	1.052	.001
	50	2.717 -5	.223	.000	6.86 -7	.829	.000	6.51 -7	.001	.000	2.35 -5	1.054	.000
8	0	2.644 -2	.000	.223	5.67 -1	.000	.667	1.25 -5	.000	.001	5.93 -1	.000	.891
	1	2.400 -2	.025	.198	2.26 -1	.371	.296	1.14 -5	.000	.001	2.50 -1	.396	.495
	2	2.173 -2	.048	.175	9.01 -2	.518	.148	1.03 -5	.000	.001	1.12 -1	.566	.325
	3	1.963 -2	.069	.155	3.60 -2	.577	.089	8.75 -6	.000	.001	5.56 -2	.646	.245
	4	1.769 -2	.087	.136	1.43 -2	.601	.066	7.91 -6	.000	.001	3.20 -2	.688	.203
	5	1.590 -2	.104	.119	5.72 -3	.610	.056	7.73 -6	.000	.001	2.16 -2	.714	.177
	10	8.926 -3	.165	.059	3.61 -3	.630	.036	1.22 -5	.000	.001	1.25 -2	.795	.096
	15	4.704 -3	.197	.027	3.02 -3	.647	.020	3.48 -5	.000	.001	7.26 -3	.844	.047
	20	1.919 -3	.211	.012	1.70 -3	.660	.007	5.74 -5	.000	.001	3.67 -3	.872	.020
	25	8.652 -4	.218	.006	4.73 -4	.665	.002	6.30 -5	.001	.000	1.40 -3	.882	.008
	35	1.827 -4	.222	.001	3.75 -5	.667	.000	1.51 -5	.001	.000	2.35 -4	.890	.001
	50	2.217 -5	.223	.000	6.86 -7	.667	.000	6.51 -7	.001	.000	2.35 -5	.891	.000
10	0	2.644 -2	.000	.223	4.51 -1	.000	.566	1.25 -5	.000	.001	4.78 -1	.000	.791
	1	2.400 -2	.025	.198	1.88 -1	.301	.265	1.14 -5	.000	.001	2.12 -1	.326	.465
	2	2.173 -2	.048	.175	7.86 -2	.426	.140	1.03 -5	.000	.001	1.00 -1	.475	.316
	3	1.963 -2	.069	.155	3.28 -2	.479	.087	8.75 -6	.000	.001	5.25 -2	.548	.243
	4	1.769 -2	.087	.136	1.37 -2	.501	.066	7.91 -6	.000	.001	3.14 -2	.588	.203
	5	1.590 -2	.104	.119	5.72 -3	.510	.056	7.73 -6	.000	.001	2.16 -2	.614	.177
	10	8.926 -3	.165	.059	3.61 -3	.530	.036	1.22 -5	.000	.001	1.25 -2	.695	.096
	15	4.704 -3	.197	.027	3.02 -3	.547	.020	3.48 -5	.000	.001	7.26 -3	.743	.047
	20	1.919 -3	.211	.012	1.70 -3	.560	.007	5.74 -5	.000	.001	3.67 -3	.771	.020
	25	8.657 -4	.218	.006	4.73 -4	.564	.002	6.30 -5	.001	.000	1.40 -3	.783	.008
	35	1.827 -4	.222	.001	3.75 -5	.566	.000	1.51 -5	.001	.000	2.35 -4	.789	.001
	50	2.717 -5	.223	.000	6.86 -7	.566	.000	6.51 -7	.001	.000	2.35 -5	.791	.000
13	0	2.644 -2	.000	.223	3.44 -1	.000	.469	1.25 -5	.000	.001	3.71 -1	.000	.694
	1	2.400 -2	.025	.198	1.52 -1	.235	.234	1.14 -5	.000	.001	1.76 -1	.260	.434
	2	2.173 -2	.048	.175	6.68 -2	.338	.131	1.03 -5	.000	.001	8.86 -2	.386	.307
	3	1.963 -2	.069	.155	2.94 -2	.384	.085	8.75 -6	.000	.001	4.91 -2	.453	.241
	4	1.769 -2	.087	.136	1.30 -2	.404	.065	7.91 -6	.000	.001	3.07 -2	.491	.202
	5	1.590 -2	.104	.119	5.72 -3	.413	.056	7.73 -6	.000	.001	2.16 -2	.517	.177
	10	8.926 -3	.165	.059	3.61 -3	.433	.036	1.22 -5	.000	.001	1.25 -2	.598	.096
	15	4.704 -3	.197	.027	3.02 -3	.450	.020	3.48 -5	.000	.001	7.26 -3	.646	.047
	20	1.919 -3	.211	.012	1.70 -3	.463	.007	5.74 -5	.000	.001	3.67 -3	.674	.020
	25	8.652 -4	.218	.006	4.73 -4	.467	.002	6.30 -5	.001	.000	1.40 -3	.686	.008
	35	1.827 -4	.222	.001	3.75 -5	.469	.000	1.51 -5	.001	.000	2.35 -4	.692	.001
	50	2.717 -5	.223	.000	6.86 -7	.469	.000	6.51 -7	.001	.000	2.35 -5	.694	.000

Table 3.10. Parameters at 0.50 Microns

Met. Rge (km) V_n	Alt. (km) h	Rayleigh atten. coeff. (km^{-1}) β_r	Rayleigh optical thick. (0-h) τ_r	Rayleigh optical thick. (h-∞) τ'_r	Aerosol atten. coeff. (km^{-1}) β_p	Aerosol optical thick. (0-h) τ_p	Aerosol optical thick. (h-∞) τ'_p	Ozone absorp. coeff. (km^{-1}) β_3	Ozone optical thick. (0-h) τ_3	Ozone optical thick. (h-∞) τ'_3	Ext. coeff. (km^{-1}) β_{ext}	Ext. optical thick. (0-h) τ_{ext}	Ext. optical thick. (h-∞) τ'_{ext}
2	0	1.716 -2	.000	.145	2.11 0	.000	1.812	1.23 -4	.300	.012	2.13 0	.000	1.968
	1	1.557 -2	.016	.129	6.38 -1	1.231	.581	1.12 -4	.300	.012	6.54 -1	1.248	.721
	2	1.410 -2	.031	.114	1.93 -1	1.[illegible]03	.209	1.01 -4	.300	.011	2.07 -1	1.634	.334
	3	1.273 -2	.045	.100	5.82 -2	1.[illegible]15	.096	8.63 -5	.300	.011	7.13 -2	1.760	.208
	4	1.148 -2	.057	.088	1.76 -2	1.749	.063	7.80 -5	.300	.011	2.91 -2	1.806	.162
	5	1.031 -2	.068	.077	5.31 -3	.759	.052	7.62 -5	.300	.011	1.57 -2	1.827	.141
	10	5.791 -3	.107	.038	3.35 -3	1.778	.034	1.21 -4	.301	.011	9.26 -3	1.886	.083
	15	2.728 -3	.128	.017	2.80 -3	1.794	.018	3.43 -4	.302	.010	5.87 -3	1.923	.045
	20	1.245 -3	.137	.008	1.57 -3	1.806	.006	5.66 -4	.304	.007	3.39 -3	1.947	.021
	25	5.614 -4	.141	.004	4.39 -4	1.810	.002	6.21 -4	.307	.004	1.62 -3	1.959	.010
	35	1.185 -4	.144	.001	3.48 -5	1.812	.000	1.49 -4	.311	.001	3.02 -4	1.967	.002
	50	1.438 -5	.145	.000	6.36 -7	1.812	.000	6.42 -6	.312	.000	2.14 -5	1.968	.000
3	0	1.716 -2	.000	.145	1.40 0	.000	1.305	1.23 -4	.300	.012	1.42 0	.000	1.462
	1	1.557 -2	.016	.129	4.60 -1	.846	.460	1.12 -4	.300	.012	4.76 -1	.862	.600
	2	1.410 -2	.031	.114	1.51 -1	1.123	.183	1.01 -4	.300	.011	1.65 -1	1.154	.308
	3	1.273 -2	.045	.100	4.94 -2	1.214	.092	8.63 -5	.300	.011	4.22 -2	1.259	.204
	4	1.148 -2	.057	.088	1.62 -2	1.243	.062	7.80 -5	.300	.011	2.77 -2	1.300	.162
	5	1.031 -2	.068	.077	5.31 -3	1.253	.052	7.62 -5	.300	.011	1.57 -2	1.321	.141
	10	5.791 -3	.107	.038	3.35 -3	1.272	.034	1.21 -4	.301	.011	9.26 -3	1.380	.083
	15	2.728 -3	.128	.017	2.80 -3	1.287	.018	3.43 -4	.302	.010	5.87 -3	1.417	.045
	20	1.245 -3	.137	.008	1.57 -3	1.299	.006	5.66 -4	.304	.007	3.39 -3	1.441	.021
	25	5.614 -4	.141	.004	4.39 -4	1.304	.002	6.21 -4	.307	.004	1.62 -3	1.452	.010
	35	1.185 -4	.144	.001	3.48 -5	1.305	.000	1.49 -4	.311	.001	3.02 -4	1.460	.002
	50	1.438 -5	.145	.000	6.36 -7	1.305	.000	6.42 -6	.312	.000	2.14 -5	1.462	.000
4	0	1.716 -2	.000	.145	1.05 0	.000	1.040	1.23 -4	.300	.012	1.07 0	.000	1.197
	1	1.557 -2	.016	.129	3.65 -1	.648	.392	1.12 -4	.300	.012	3.80 -1	.664	.532
	2	1.410 -2	.031	.114	1.27 -1	.873	.167	1.01 -4	.300	.011	1.41 -1	.904	.292
	3	1.273 -2	.045	.100	4.40 -2	.951	.089	8.63 -5	.300	.011	5.68 -2	.996	.201
	4	1.148 -2	.057	.088	1.53 -2	.978	.062	7.80 -5	.300	.011	2.68 -2	1.035	.161
	5	1.031 -2	.068	.077	5.31 -3	.988	.052	7.62 -5	.300	.011	1.57 -2	1.056	.141
	10	5.791 -3	.107	.038	3.35 -3	1.006	.034	1.21 -4	.301	.011	9.26 -3	1.114	.083
	15	2.728 -3	.128	.017	2.80 -3	1.022	.018	3.43 -4	.302	.010	5.87 -3	1.152	.045
	20	1.245 -3	.137	.008	1.57 -3	1.034	.006	5.66 -4	.304	.007	3.39 -3	1.175	.021
	25	5.614 -4	.141	.004	4.39 -4	1.038	.002	6.21 -4	.307	.004	1.62 -3	1.187	.010
	35	1.185 -4	.144	.001	3.48 -5	1.040	.000	1.49 -4	.311	.001	3.02 -4	1.195	.002
	50	1.438 -5	.145	.000	6.36 -7	1.040	.000	6.42 -6	.312	.000	2.14 -5	1.197	.000
5	0	1.716 -2	.000	.145	8.37 -1	.000	.874	1.23 -4	.300	.012	8.54 -1	.000	1.031
	1	1.557 -2	.016	.129	3.04 -1	.526	.348	1.12 -4	.300	.012	3.20 -1	.543	.488
	2	1.410 -2	.031	.114	1.11 -1	.718	.156	1.01 -4	.300	.011	1.25 -1	.749	.281
	3	1.273 -2	.045	.100	4.02 -2	.787	.087	8.63 -5	.300	.011	5.30 -2	.832	.198
	4	1.148 -2	.057	.088	1.46 -2	.812	.061	7.80 -5	.300	.011	2.62 -2	.869	.161
	5	1.031 -2	.068	.077	5.31 -3	.822	.052	7.62 -5	.300	.011	1.57 -2	.890	.141
	10	5.791 -3	.107	.038	3.35 -3	.840	.034	1.21 -4	.301	.011	9.26 -3	.948	.083
	15	2.728 -3	.128	.017	2.80 -3	.856	.018	3.43 -4	.302	.010	5.87 -3	.985	.045
	20	1.245 -3	.137	.008	1.57 -3	.868	.006	5.66 -4	.304	.007	3.39 -3	1.009	.021
	25	5.614 -4	.141	.004	4.39 -4	.872	.002	6.21 -4	.307	.004	1.62 -3	1.021	.010
	35	1.185 -4	.144	.001	3.48 -5	.874	.000	1.49 -4	.311	.001	3.02 -4	1.029	.002
	50	1.438 -5	.145	.000	6.36 -7	.874	.000	6.42 -6	.312	.000	2.14 -5	1.030	.000

6	0	1.716 -2	.000	.145	6.96 -1	.000	.760	1.23 -4	.300	.012	7.13 -1	.000	.917
	1	1.557 -2	.016	.129	2.62 -1	.444	.316	1.12 -4	.300	.012	2.78 -1	.461	.456
	2	1.410 -2	.031	.114	9.89 -2	.612	.148	1.01 -4	.300	.011	1.13 -1	.643	.274
	3	1.273 -2	.045	.100	3.73 -2	.675	.085	8.63 -5	.300	.011	5.01 -2	.720	.197
	4	1.148 -2	.057	.088	1.41 -2	.699	.061	7.80 -5	.300	.011	2.56 -2	.756	.161
	5	1.031 -2	.068	.077	5.31 -3	.708	.052	7.62 -5	.300	.011	1.57 -2	.776	.141
	10	5.791 -3	.107	.038	3.35 -3	.726	.034	1.21 -4	.301	.011	9.26 -3	.834	.083
	15	2.728 -3	.128	.017	2.80 -3	.742	.018	3.43 -4	.302	.010	5.87 -3	.872	.045
	20	1.245 -3	.137	.008	1.57 -3	.754	.006	5.66 -4	.304	.007	3.39 -3	.895	.021
	25	5.614 -4	.141	.004	4.39 -4	.758	.002	6.21 -4	.307	.004	1.62 -3	.907	.010
	35	1.185 -4	.144	.001	3.48 -5	.760	.000	1.49 -4	.311	.001	3.02 -4	.915	.002
	50	1.438 -5	.145	.000	6.36 -7	.760	.000	6.42 -6	.312	.000	2.14 -5	.917	.000
8	0	1.716 -2	.000	.145	5.17 -1	.000	.611	1.23 -4	.300	.012	5.35 -1	.000	.768
	1	1.557 -2	.016	.129	2.07 -1	.339	.273	1.12 -4	.300	.012	2.23 -1	.355	.413
	2	1.410 -2	.031	.114	8.28 -2	.474	.137	1.01 -4	.300	.011	9.70 -2	.506	.262
	3	1.273 -2	.045	.100	3.31 -2	.529	.083	8.63 -5	.300	.011	4.60 -2	.574	.194
	4	1.148 -2	.057	.088	1.33 -2	.550	.061	7.80 -5	.300	.011	2.48 -2	.607	.161
	5	1.031 -2	.068	.077	5.31 -3	.559	.052	7.62 -5	.300	.011	1.57 -2	.627	.141
	10	5.791 -3	.107	.038	3.35 -3	.578	.034	1.21 -4	.301	.011	9.26 -3	.685	.083
	15	2.728 -3	.128	.017	2.80 -3	.593	.018	3.43 -4	.302	.010	5.87 -3	.723	.045
	20	1.245 -3	.137	.008	1.57 -3	.605	.006	5.66 -4	.304	.007	3.39 -3	.747	.021
	25	5.614 -4	.141	.004	4.39 -4	.610	.002	6.21 -4	.307	.004	1.62 -3	.758	.010
	35	1.185 -4	.144	.001	3.48 -5	.611	.000	1.49 -4	.311	.001	3.02 -4	.766	.002
	50	1.438 -5	.145	.000	6.36 -7	.611	.000	6.42 -6	.312	.000	2.14 -5	.768	.000
10	0	1.716 -2	.000	.145	4.12 -1	.000	.520	1.23 -4	.300	.012	4.29 -1	.000	.676
	1	1.557 -2	.016	.129	1.73 -1	.275	.244	1.12 -4	.300	.012	1.88 -1	.292	.385
	2	1.410 -2	.031	.114	7.22 -2	.390	.129	1.01 -4	.300	.011	8.64 -2	.422	.254
	3	1.273 -2	.045	.100	3.03 -2	.439	.081	8.63 -5	.300	.011	4.31 -2	.483	.193
	4	1.148 -2	.057	.088	1.27 -2	.459	.061	7.80 -5	.300	.011	2.42 -2	.516	.160
	5	1.031 -2	.068	.077	5.31 -3	.467	.052	7.62 -5	.300	.011	1.57 -2	.535	.141
	10	5.791 -3	.107	.038	3.35 -3	.486	.034	1.21 -4	.301	.011	9.26 -3	.594	.083
	15	2.728 -3	.128	.017	2.80 -3	.501	.018	3.43 -4	.302	.010	5.87 -3	.631	.045
	20	1.245 -3	.137	.008	1.57 -3	.513	.006	5.66 -4	.304	.007	3.39 -3	.655	.021
	25	5.614 -4	.141	.004	4.39 -4	.518	.002	6.21 -4	.307	.004	1.62 -3	.666	.010
	35	1.185 -4	.144	.001	3.48 -5	.519	.000	1.49 -4	.311	.001	3.02 -4	.674	.002
	50	1.438 -5	.145	.000	6.36 -7	.520	.000	6.42 -6	.312	.000	2.14 -5	.676	.000
13	0	1.716 -2	.000	.145	3.14 -1	.000	.431	1.23 -4	.300	.012	3.31 -1	.000	.587
	1	1.557 -2	.016	.129	1.39 -1	.215	.216	1.12 -4	.300	.012	1.55 -1	.231	.356
	2	1.410 -2	.031	.114	6.14 -2	.310	.121	1.01 -4	.300	.011	7.56 -2	.341	.246
	3	1.273 -2	.045	.100	2.71 -2	.352	.079	8.63 -5	.300	.011	4.00 -2	.396	.191
	4	1.148 -2	.057	.088	1.20 -2	.370	.061	7.80 -5	.300	.011	2.36 -2	.427	.160
	5	1.031 -2	.068	.077	5.31 -3	.378	.052	7.62 -5	.300	.011	1.57 -2	.446	.141
	10	5.791 -3	.107	.038	3.35 -3	.397	.034	1.21 -4	.301	.011	9.26 -3	.505	.083
	15	2.728 -3	.128	.017	2.80 -3	.412	.018	3.43 -4	.302	.010	5.87 -3	.542	.045
	20	1.245 -3	.137	.008	1.57 -3	.425	.006	5.66 -4	.304	.007	3.39 -3	.566	.021
	25	5.614 -4	.141	.004	4.39 -4	.429	.002	6.21 -4	.307	.004	1.62 -3	.578	.010
	35	1.185 -4	.144	.001	3.48 -5	.431	.000	1.49 -4	.311	.001	3.02 -4	.586	.002
	50	1.438 -5	.145	.000	6.36 -7	.431	.000	6.42 -6	.312	.000	2.14 -5	.587	.000

Table 3.11. Parameters at 0.55 Microns

Met. Rge (km) V_n	Alt. (km) h	Rayleigh atten. coeff. (km^{-1}) β_r	Rayleigh optical thick. (0-h) τ_r	Rayleigh optical thick. (h-∞) τ'_r	Aerosol atten. coeff. (km^{-1}) β_p	Aerosol optical thick. (0-h) τ_p	Aerosol optical thick. (h-∞) τ'_p	Ozone absorp. coeff. (km^{-1}) β_3	Ozone optical thick. (0-h) τ_3	Ozone optical thick. (h-∞) τ'_3	Ext. coeff. (km^{-1}) β_{ext}	Ext. optical thick. (0-h) τ_{ext}	Ext. optical thick. (h-∞) τ'_{ext}
2	0	1.162 -2	.000	.098	1.94 0	.000	1.676	3.28 -4	.000	.031	1.95 0	.000	1.805
	1	1.055 -2	.011	.087	5.90 -1	1.135	.540	3.00 -4	.000	.031	6.01 -1	1.147	.658
	2	9.550 -3	.021	.077	1.79 -1	1.480	.196	2.70 -4	.001	.030	1.89 -1	1.502	.303
	3	8.627 -3	.030	.068	5.44 -2	1.585	.091	2.30 -4	.001	.030	6.33 -2	1.616	.189
	4	7.774 -3	.038	.060	1.65 -2	1.617	.059	2.08 -4	.001	.030	2.45 -2	1.656	.149
	5	6.987 -3	.046	.052	5.02 -3	1.626	.049	2.03 -4	.001	.030	1.22 -2	1.673	.132
	10	3.923 -3	.072	.026	3.17 -3	1.644	.032	3.22 -4	.002	.029	7.42 -3	1.719	.086
	15	1.848 -3	.086	.012	2.65 -3	1.658	.017	9.14 -4	.006	.025	5.41 -3	1.751	.054
	20	8.435 -4	.093	.005	1.49 -3	1.670	.006	1.51 -3	.011	.020	3.84 -3	1.774	.031
	25	3.803 -4	.096	.002	4.15 -4	1.674	.002	1.66 -3	.020	.011	2.45 -3	1.790	.015
	35	8.030 -5	.098	.001	3.29 -5	1.676	.000	3.97 -4	.029	.002	5.10 -4	1.802	.003
	50	9.743 -6	.098	.000	6.02 -7	1.676	.000	1.71 -5	.031	.000	2.75 -5	1.805	.000
3	0	1.162 -2	.000	.098	1.29 0	.000	1.208	3.28 -4	.000	.031	1.30 0	.000	1.337
	1	1.055 -2	.011	.087	4.25 -1	.780	.428	3.00 -4	.000	.031	4.36 -1	.791	.546
	2	9.550 -3	.021	.077	1.40 -1	1.037	.171	2.70 -4	.001	.030	1.50 -1	1.058	.279
	3	8.627 -3	.030	.068	4.62 -2	1.121	.087	2.30 -4	.001	.030	5.51 -2	1.153	.185
	4	7.774 -3	.038	.060	1.52 -2	1.149	.059	2.08 -4	.001	.030	2.32 -2	1.189	.149
	5	6.987 -3	.046	.052	5.02 -3	1.159	.049	2.03 -4	.001	.030	1.22 -2	1.206	.132
	10	3.923 -3	.072	.026	3.17 -3	1.176	.032	3.22 -4	.002	.029	7.42 -3	1.251	.086
	15	1.848 -3	.086	.012	2.65 -3	1.191	.017	9.14 -4	.006	.025	5.41 -3	1.283	.054
	20	8.435 -4	.093	.005	1.49 -3	1.202	.006	1.51 -3	.011	.020	3.84 -3	1.306	.031
	25	3.803 -4	.096	.002	4.15 -4	1.206	.002	1.66 -3	.020	.011	2.45 -3	1.322	.015
	35	8.030 -5	.098	.001	3.29 -5	1.208	.000	3.97 -4	.029	.002	5.10 -4	1.335	.003
	50	9.743 -6	.098	.000	6.02 -7	1.208	.000	1.71 -5	.031	.000	2.75 -5	1.337	.000
4	0	1.162 -2	.000	.098	9.66 -1	.000	.963	3.28 -4	.000	.031	9.78 -1	.000	1.092
	1	1.055 -2	.011	.087	3.37 -1	.598	.365	3.00 -4	.000	.031	3.48 -1	.609	.483
	2	9.550 -3	.021	.077	1.18 -1	.806	.157	2.70 -4	.001	.030	1.28 -1	.828	.264
	3	8.627 -3	.030	.068	4.12 -2	.879	.084	2.30 -4	.001	.030	5.00 -2	.910	.182
	4	7.774 -3	.038	.060	1.44 -2	.905	.058	2.08 -4	.001	.030	2.24 -2	.944	.148
	5	6.987 -3	.046	.052	5.02 -3	.914	.049	2.03 -4	.001	.030	1.22 -2	.961	.132
	10	3.923 -3	.072	.026	3.17 -3	.931	.032	3.22 -4	.002	.029	7.42 -3	1.006	.086
	15	1.848 -3	.086	.012	2.65 -3	.946	.017	9.14 -4	.006	.025	5.41 -3	1.038	.054
	20	8.435 -4	.093	.005	1.49 -3	.957	.006	1.51 -3	.011	.020	3.84 -3	1.061	.031
	25	3.803 -4	.096	.002	4.15 -4	.961	.002	1.66 -3	.020	.011	2.45 -3	1.077	.015
	35	8.030 -5	.098	.001	3.29 -5	.963	.000	3.97 -4	.029	.002	5.10 -4	1.090	.003
	50	9.743 -6	.098	.000	6.02 -7	.963	.000	1.71 -5	.031	.000	2.75 -5	1.092	.000
5	0	1.162 -2	.000	.098	7.70 -1	.000	.809	3.28 -4	.000	.031	7.82 -1	.000	.939
	1	1.055 -2	.011	.087	2.81 -1	.465	.324	3.00 -4	.000	.031	2.92 -1	.497	.442
	2	9.550 -3	.021	.077	1.03 -1	.663	.147	2.70 -4	.001	.030	1.13 -1	.684	.254
	3	8.627 -3	.030	.068	3.76 -2	.728	.082	2.30 -4	.001	.030	4.64 -2	.759	.180
	4	7.774 -3	.038	.060	1.37 -2	.751	.058	2.08 -4	.001	.030	2.17 -2	.791	.148
	5	6.987 -3	.046	.052	5.02 -3	.760	.049	2.03 -4	.001	.030	1.22 -2	.807	.132
	10	3.923 -3	.072	.026	3.17 -3	.778	.032	3.22 -4	.002	.029	7.42 -3	.852	.086
	15	1.848 -3	.086	.012	2.65 -3	.792	.017	9.14 -4	.006	.025	5.41 -3	.884	.054
	20	8.435 -4	.093	.005	1.49 -3	.804	.006	1.51 -3	.011	.020	3.84 -3	.908	.031
	25	3.803 -4	.096	.002	4.15 -4	.808	.002	1.66 -3	.020	.011	2.45 -3	.923	.015
	35	8.030 -5	.098	.001	3.29 -5	.809	.000	3.97 -4	.029	.002	5.10 -4	.936	.003
	50	9.743 -6	.098	.000	6.02 -7	.809	.000	1.71 -5	.031	.000	2.75 -5	.939	.000

6	0	1.162 -2	.000	.098	6.40 -1	.000	.704	3.28 -4	.000	.031	6.52 -1	.000	.834
	1	1.055 -2	.011	.087	2.43 -1	.410	.295	3.00 -4	.000	.031	2.54 -1	.421	.413
	2	9.550 -3	.021	.077	9.20 -2	.565	.139	2.70 -4	.001	.030	1.02 -1	.587	.247
	3	8.627 -3	.030	.068	3.49 -2	.624	.080	2.30 -4	.001	.030	4.38 -2	.655	.179
	4	7.774 -3	.038	.060	1.32 -2	.646	.058	2.08 -4	.001	.030	2.12 -2	.686	.148
	5	6.987 -3	.046	.052	5.02 -3	.655	.049	2.03 -4	.001	.030	1.22 -2	.702	.132
	10	3.923 -3	.072	.026	3.17 -3	.672	.032	3.22 -4	.002	.029	7.42 -3	.747	.086
	15	1.848 -3	.086	.012	2.65 -3	.687	.017	9.14 -4	.006	.025	5.41 -3	.779	.054
	20	8.435 -4	.093	.005	1.49 -3	.699	.006	1.51 -3	.011	.020	3.84 -3	.803	.031
	25	3.803 -4	.096	.002	4.15 -4	.703	.002	1.66 -3	.020	.011	2.45 -3	.818	.015
	35	8.030 -5	.098	.001	3.29 -5	.704	.000	3.97 -4	.029	.002	5.10 -4	.831	.003
	50	9.743 -6	.098	.000	6.02 -7	.704	.000	1.71 -5	.031	.000	2.75 -5	.834	.000
8	0	1.162 -2	.000	.098	4.76 -1	.000	.567	3.28 -4	.000	.031	4.88 -1	.000	.696
	1	1.055 -2	.011	.087	1.92 -1	.312	.254	3.00 -4	.000	.031	2.02 -1	.324	.372
	2	9.550 -3	.021	.077	7.71 -2	.438	.129	2.70 -4	.001	.030	8.69 -2	.460	.236
	3	8.627 -3	.030	.068	3.10 -2	.489	.078	2.30 -4	.001	.030	3.99 -2	.520	.176
	4	7.774 -3	.038	.060	1.25 -2	.509	.058	2.08 -4	.001	.030	2.05 -2	.549	.148
	5	6.987 -3	.046	.052	5.02 -3	.517	.049	2.03 -4	.001	.030	1.22 -2	.564	.132
	10	3.923 -3	.072	.026	3.17 -3	.535	.032	3.22 -4	.002	.029	7.42 -3	.610	.086
	15	1.848 -3	.086	.012	2.65 -3	.550	.017	9.14 -4	.006	.025	5.41 -3	.642	.054
	20	8.435 -4	.093	.005	1.49 -3	.561	.006	1.51 -3	.011	.020	3.84 -3	.665	.031
	25	3.803 -4	.096	.002	4.15 -4	.565	.002	1.66 -3	.020	.011	2.45 -3	.681	.015
	35	8.030 -5	.098	.001	3.29 -5	.567	.000	3.97 -4	.029	.002	5.10 -4	.693	.003
	50	9.743 -6	.098	.000	6.02 -7	.567	.000	1.71 -5	.031	.000	2.75 -5	.696	.000
10	0	1.162 -2	.000	.098	3.79 -1	.000	.482	3.28 -4	.000	.031	3.91 -1	.000	.611
	1	1.055 -2	.011	.087	1.60 -1	.254	.228	3.00 -4	.000	.031	1.70 -1	.265	.346
	2	9.550 -3	.021	.077	6.72 -2	.361	.121	2.70 -4	.001	.030	7.70 -2	.382	.229
	3	8.627 -3	.030	.068	2.83 -2	.406	.076	2.30 -4	.001	.030	3.72 -2	.437	.175
	4	7.774 -3	.038	.060	1.19 -2	.424	.057	2.08 -4	.001	.030	1.99 -2	.464	.147
	5	6.987 -3	.046	.052	5.02 -3	.432	.049	2.03 -4	.001	.030	1.22 -2	.479	.132
	10	3.923 -3	.072	.026	3.17 -3	.450	.032	3.22 -4	.002	.029	7.42 -3	.525	.086
	15	1.848 -3	.086	.012	2.65 -3	.465	.017	9.14 -4	.006	.025	5.41 -3	.557	.054
	20	8.435 -4	.093	.005	1.49 -3	.476	.006	1.51 -3	.011	.020	3.84 -3	.580	.031
	25	3.803 -4	.096	.002	4.15 -4	.480	.002	1.66 -3	.020	.011	2.45 -3	.596	.015
	35	8.030 -5	.098	.001	3.29 -5	.482	.000	3.97 -4	.029	.002	5.10 -4	.609	.003
	50	9.743 -6	.098	.000	6.02 -7	.482	.000	1.71 -5	.031	.000	2.75 -5	.611	.000
13	0	1.162 -2	.000	.098	2.89 -1	.000	.400	3.28 -4	.000	.031	3.01 -1	.000	.529
	1	1.055 -2	.011	.087	1.28 -1	.198	.202	3.00 -4	.000	.031	1.39 -1	.209	.320
	2	9.550 -3	.021	.077	5.71 -2	.286	.114	2.70 -4	.001	.030	6.69 -2	.308	.221
	3	8.627 -3	.030	.068	2.54 -2	.325	.075	2.30 -4	.001	.030	3.43 -2	.356	.173
	4	7.774 -3	.038	.060	1.13 -2	.343	.057	2.08 -4	.001	.030	1.93 -2	.382	.147
	5	6.987 -3	.046	.052	5.02 -3	.350	.049	2.03 -4	.001	.030	1.22 -2	.397	.132
	10	3.923 -3	.072	.026	3.17 -3	.368	.032	3.22 -4	.002	.029	7.42 -3	.443	.086
	15	1.848 -3	.086	.012	2.65 -3	.383	.017	9.14 -4	.006	.025	5.41 -3	.475	.054
	20	8.435 -4	.093	.005	1.49 -3	.394	.006	1.51 -3	.011	.020	3.84 -3	.498	.031
	25	3.803 -4	.096	.002	4.15 -4	.398	.002	1.66 -3	.020	.011	2.45 -3	.514	.015
	35	8.030 -5	.098	.001	3.29 -5	.400	.000	3.97 -4	.029	.002	5.10 -4	.526	.003
	50	9.743 -6	.098	.000	6.02 -7	.400	.000	1.71 -5	.031	.000	2.75 -5	.529	.000

Table 3.12. Parameters at 0.60 Microns

Met. Rge (km) V_n	Alt. (km) h	Rayleigh atten. coeff. (km^{-1}) β_r	Rayleigh optical thick. (0-h) τ_r	Rayleigh optical thick. (h-∞) τ'_r	Aerosol atten. coeff. (km^{-1}) β_p	Aerosol optical thick. (0-h) τ_p	Aerosol optical thick. (h-∞) τ'_p	Ozone absorp. coeff. (km^{-1}) β_3	Ozone optical thick. (0-h) τ_3	Ozone optical thick. (h-∞) τ'_3	Ext. coeff. (km^{-1}) β_{ext}	Ext. optical thick. (0-h) τ_{ext}	Ext. optical thick. (h-∞) τ'_{ext}
	0	8.156 -3	.000	.069	1.73 0	.000	1.510	4.70 -4	.000	.045	1.74 0	.000	1.624
	1	7.401 -3	.008	.061	5.32 -1	1.016	.494	4.30 -4	.000	.044	5.40 -1	1.024	.600
	2	6.701 -3	.015	.054	1.64 -1	1.328	.182	3.87 -4	.001	.044	1.71 -1	1.344	.280
	3	6.054 -3	.021	.048	5.04 -2	1.425	.086	3.30 -4	.001	.043	5.67 -2	1.447	.177
	4	5.455 -3	.027	.042	1.55 -2	1.454	.056	2.98 -4	.002	.043	2.12 -2	1.483	.141
2	5	4.903 -3	.032	.037	4.77 -3	1.463	.047	2.92 -4	.002	.043	9.96 -3	1.497	.127
	10	2.754 -3	.051	.018	3.01 -3	1.480	.030	4.62 -4	.003	.041	6.22 -3	1.534	.090
	15	1.297 -3	.061	.008	2.52 -3	1.494	.016	1.31 -3	.008	.036	5.12 -3	1.563	.061
	20	5.919 -4	.065	.004	1.41 -3	1.505	.005	2.16 -3	.016	.028	4.17 -3	1.586	.039
	25	2.669 -4	.067	.002	3.94 -4	1.509	.002	2.38 -3	.029	.016	3.04 -3	1.604	.019
	35	5.635 -5	.068	.000	3.12 -5	1.510	.000	5.69 -4	.042	.003	6.57 -4	1.620	.003
	50	6.837 -6	.069	.000	5.72 -7	1.510	.000	2.45 -5	.045	.000	3.20 -5	1.624	.000
	0	8.156 -3	.000	.069	1.15 0	.000	1.090	4.70 -4	.000	.045	1.16 0	.000	1.204
	1	7.401 -3	.008	.061	3.84 -1	.698	.392	4.30 -4	.000	.044	3.92 -1	.706	.498
	2	6.701 -3	.015	.054	1.28 -1	.931	.159	3.87 -4	.001	.044	1.35 -1	.947	.257
	3	6.054 -3	.021	.048	4.28 -2	1.009	.082	3.30 -4	.001	.043	4.91 -2	1.031	.173
	4	5.455 -3	.027	.042	1.43 -2	1.035	.056	2.98 -4	.002	.043	2.00 -2	1.063	.141
3	5	4.903 -3	.032	.037	4.77 -3	1.043	.047	2.92 -4	.002	.043	9.96 -3	1.077	.127
	10	2.754 -3	.051	.018	3.01 -3	1.060	.030	4.62 -4	.003	.041	6.22 -3	1.114	.090
	15	1.297 -3	.061	.008	2.52 -3	1.074	.016	1.31 -3	.008	.036	5.12 -3	1.143	.061
	20	5.919 -4	.065	.004	1.41 -3	1.085	.005	2.16 -3	.016	.028	4.17 -3	1.166	.038
	25	2.669 -4	.067	.002	3.94 -4	1.089	.002	2.38 -3	.029	.016	3.04 -3	1.184	.019
	35	5.635 -5	.068	.000	3.12 -5	1.090	.000	5.69 -4	.042	.003	6.57 -4	1.200	.003
	50	6.837 -6	.069	.000	5.72 -7	1.090	.000	2.46 -5	.045	.000	3.20 -5	1.204	.000
	0	8.156 -3	.000	.069	8.60 -1	.000	.870	4.70 -4	.000	.045	8.69 -1	.000	.984
	1	7.401 -3	.008	.061	3.04 -1	.535	.335	4.30 -4	.000	.044	3.12 -1	.543	.440
	2	6.701 -3	.015	.054	1.08 -1	.724	.146	3.87 -4	.001	.044	1.15 -1	.740	.244
	3	6.054 -3	.021	.048	3.81 -2	.791	.079	3.30 -4	.001	.043	4.45 -2	.813	.170
	4	5.455 -3	.027	.042	1.35 -2	.815	.055	2.98 -4	.002	.043	1.92 -2	.843	.140
4	5	4.903 -3	.032	.037	4.77 -3	.823	.047	2.92 -4	.002	.043	9.96 -3	.857	.127
	10	2.754 -3	.051	.018	3.01 -3	.840	.030	4.62 -4	.003	.041	6.22 -3	.894	.090
	15	1.297 -3	.061	.008	2.52 -3	.854	.016	1.31 -3	.008	.036	5.12 -3	.922	.061
	20	5.919 -4	.065	.004	1.41 -3	.865	.005	2.16 -3	.016	.028	4.17 -3	.946	.038
	25	2.669 -4	.067	.002	3.94 -4	.868	.002	2.38 -3	.029	.016	3.04 -3	.964	.019
	35	5.635 -5	.068	.000	3.12 -5	.870	.000	5.69 -4	.042	.003	6.57 -4	.980	.003
	50	6.837 -6	.069	.000	5.72 -7	.870	.000	2.46 -5	.045	.000	3.20 -5	.983	.000
	0	8.156 -3	.000	.069	6.86 -1	.000	.732	4.70 -4	.000	.045	6.94 -1	.000	.846
	1	7.401 -3	.008	.061	2.54 -1	.434	.298	4.30 -4	.000	.044	2.62 -1	.443	.403
	2	6.701 -3	.015	.054	9.39 -2	.595	.137	3.87 -4	.001	.044	1.01 -1	.611	.235
	3	6.054 -3	.021	.048	3.48 -2	.655	.077	3.30 -4	.001	.043	4.12 -2	.677	.168
	4	5.455 -3	.027	.042	1.29 -2	.677	.055	2.98 -4	.002	.043	1.86 -2	.705	.140
5	5	4.903 -3	.032	.037	4.77 -3	.685	.047	2.92 -4	.002	.043	9.96 -3	.719	.127
	10	2.754 -3	.051	.018	3.01 -3	.702	.030	4.62 -4	.003	.041	6.22 -3	.756	.090
	15	1.297 -3	.061	.008	2.52 -3	.716	.016	1.31 -3	.008	.036	5.12 -3	.784	.061
	20	5.919 -4	.065	.004	1.41 -3	.727	.005	2.16 -3	.016	.028	4.17 -3	.808	.038
	25	2.669 -4	.067	.002	3.94 -4	.730	.002	2.38 -3	.029	.016	3.04 -3	.826	.019
	35	5.635 -5	.068	.000	3.12 -5	.732	.000	5.69 -4	.042	.003	6.57 -4	.842	.003
	50	6.837 -6	.069	.000	5.72 -7	.732	.000	2.46 -5	.045	.000	3.20 -5	.845	.000

6	0	8.156 -3	.000	.069	5.70 -1	.000	.638	4.70 -4	.300	.045	5.78 -1	.000	.751
	1	7.401 -3	.008	.061	2.19 -1	.367	.271	4.30 -4	.300	.044	2.27 -1	.375	.376
	2	6.701 -3	.015	.054	8.41 -2	.508	.130	3.87 -4	.301	.044	9.12 -2	.523	.228
	3	6.054 -3	.021	.048	3.23 -2	.562	.076	3.30 -4	.301	.043	3.87 -2	.584	.167
	4	5.455 -3	.027	.042	1.24 -2	.583	.055	2.98 -4	.302	.043	1.82 -2	.611	.140
	5	4.903 -3	.032	.037	4.77 -3	.591	.047	2.92 -4	.302	.043	9.96 -3	.624	.127
	10	2.753 -3	.051	.018	3.01 -3	.607	.030	4.62 -4	.303	.041	6.22 -3	.662	.090
	15	1.247 -3	.061	.008	2.52 -3	.621	.016	1.31 -3	.306	.036	5.12 -3	.690	.061
	20	5.919 -4	.065	.004	1.41 -3	.632	.005	2.16 -3	.316	.028	4.17 -3	.713	.038
	25	2.669 -4	.067	.002	3.94 -4	.636	.002	2.38 -3	.329	.016	3.04 -3	.732	.019
	35	5.635 -5	.068	.000	3.12 -5	.637	.000	5.69 -4	.342	.003	6.57 -4	.748	.003
	50	6.837 -6	.069	.000	5.72 -7	.638	.000	2.46 -5	.345	.000	3.20 -5	.751	.000
8	0	8.156 -3	.000	.069	4.24 -1	.000	.514	4.70 -4	.300	.045	4.32 -1	.000	.627
	1	7.401 -3	.008	.061	1.73 -1	.280	.234	4.30 -4	.300	.044	1.81 -1	.288	.339
	2	6.701 -3	.015	.054	7.04 -2	.394	.120	3.87 -4	.301	.044	7.75 -2	.409	.218
	3	6.054 -3	.021	.048	2.87 -2	.440	.074	3.30 -4	.301	.043	3.51 -2	.463	.165
	4	5.455 -3	.027	.042	1.17 -2	.459	.055	2.98 -4	.302	.043	1.74 -2	.488	.140
	5	4.903 -3	.032	.037	4.77 -3	.467	.047	2.92 -4	.302	.043	9.96 -3	.501	.127
	10	2.753 -3	.051	.018	3.01 -3	.484	.030	4.62 -4	.303	.041	6.22 -3	.538	.090
	15	1.247 -3	.061	.008	2.52 -3	.497	.016	1.31 -3	.308	.036	5.12 -3	.566	.061
	20	5.919 -4	.065	.004	1.41 -3	.508	.005	2.16 -3	.316	.028	4.17 -3	.590	.038
	25	2.669 -4	.067	.002	3.94 -4	.512	.002	2.38 -3	.329	.016	3.04 -3	.608	.019
	35	5.635 -5	.068	.000	3.12 -5	.514	.000	5.69 -4	.342	.003	6.57 -4	.624	.003
	50	6.837 -6	.069	.000	5.72 -7	.514	.000	2.46 -5	.345	.000	3.20 -5	.627	.000
10	0	8.156 -3	.000	.069	3.37 -1	.000	.437	4.70 -4	.300	.045	3.46 -1	.000	.551
	1	7.401 -3	.008	.061	1.44 -1	.227	.210	4.30 -4	.300	.044	1.52 -1	.235	.316
	2	6.701 -3	.015	.054	6.14 -2	.324	.113	3.87 -4	.301	.044	6.85 -2	.340	.211
	3	6.054 -3	.021	.048	2.62 -2	.365	.072	3.30 -4	.301	.043	3.26 -2	.388	.163
	4	5.455 -3	.027	.042	1.12 -2	.383	.055	2.98 -4	.302	.043	1.69 -2	.411	.140
	5	4.903 -3	.032	.037	4.77 -3	.390	.047	2.92 -4	.302	.043	9.96 -3	.424	.127
	10	2.753 -3	.051	.018	3.01 -3	.407	.030	4.62 -4	.303	.041	6.22 -3	.461	.090
	15	1.297 -3	.061	.008	2.52 -3	.421	.016	1.31 -3	.308	.036	5.12 -3	.490	.061
	20	5.919 -4	.065	.004	1.41 -3	.432	.005	2.16 -3	.316	.028	4.17 -3	.513	.038
	25	2.669 -4	.067	.002	3.94 -4	.436	.002	2.38 -3	.329	.016	3.04 -3	.532	.019
	35	5.635 -5	.068	.000	3.12 -5	.437	.000	5.69 -4	.342	.003	6.57 -4	.548	.003
	50	6.837 -6	.069	.000	5.72 -7	.437	.000	2.46 -5	.345	.000	3.20 -5	.551	.000
13	0	8.156 -3	.000	.069	2.57 -1	.000	.364	4.70 -4	.300	.045	2.66 -1	.000	.477
	1	7.401 -3	.008	.061	1.16 -1	.177	.186	4.30 -4	.300	.044	1.24 -1	.185	.292
	2	6.701 -3	.015	.054	5.22 -2	.257	.106	3.87 -4	.301	.044	5.93 -2	.273	.204
	3	6.054 -3	.021	.048	2.35 -2	.293	.070	3.30 -4	.301	.043	2.99 -2	.315	.162
	4	5.455 -3	.027	.042	1.06 -2	.309	.054	2.98 -4	.302	.043	1.63 -2	.338	.139
	5	4.903 -3	.032	.037	4.77 -3	.317	.047	2.92 -4	.302	.043	9.96 -3	.350	.127
	10	2.753 -3	.051	.018	3.01 -3	.333	.030	4.62 -4	.303	.041	6.22 -3	.388	.090
	15	1.297 -3	.061	.008	2.52 -3	.347	.016	1.31 -3	.308	.036	5.12 -3	.416	.061
	20	5.919 -4	.065	.004	1.41 -3	.358	.005	2.16 -3	.316	.028	4.17 -3	.439	.038
	25	2.669 -4	.067	.002	3.94 -4	.362	.002	2.38 -3	.329	.016	3.04 -3	.458	.019
	35	5.635 -5	.068	.000	3.12 -5	.363	.000	5.69 -4	.342	.003	6.57 -4	.474	.003
	50	6.837 -6	.069	.000	5.72 -7	.364	.000	2.46 -5	.345	.000	3.20 -5	.477	.000

Table 3.13. Parameters at 0.65 Microns

Met. Rge (km) V_m	Alt. (km) h	Rayleigh atten. coeff. (km^{-1}) β_r	Rayleigh optical thick. (0-h) τ_r	Rayleigh optical thick. (h-∞) τ'_r	Aerosol atten. coeff. (km^{-1}) β_p	Aerosol optical thick. (0-h) τ_p	Aerosol optical thick. (h-∞) τ'_p	Ozone absorp. coeff. (km^{-1}) β_3	Ozone optical thick. (0-h) τ_3	Ozone optical thick. (h-∞) τ'_3	Ext. coeff. (km^{-1}) β_{ext}	Ext. optical thick. (0-h) τ_{ext}	Ext. optical thick. (h-∞) τ'_{ext}
2	0	5.893 -3	.000	.050	1.57 0	.000	1.381	2.21 -6	.000	.021	1.57 0	[illegible]	1.452
	1	5.348 -3	.006	.044	4.87 -1	.925	.457	2.32 -6	.000	.021	4.92 -1	[illegible]	.521
	2	4.847 -3	.011	.039	1.51 -1	1.212	.170	1.82 -6	.000	.021	1.56 -1	1.225	.229
	3	4.374 -3	.015	.034	4.69 -2	1.301	.081	1.55 -6	.001	.020	5.16 -2	1.316	.136
	4	3.942 -3	.019	.030	1.45 -2	1.328	.053	1.40 -6	.001	.020	[illegible]	1.344	[illegible]
	5	3.543 -3	.023	.027	4.51 -3	1.337	.044	1.37 -6	.001	.020	[illegible]	[illegible]	[illegible]
	10	1.969 -3	.037	.013	2.85 -3	1.353	.029	2.17 -6	.002	.019	[illegible]	1.391	[illegible]
	15	9.169 -4	.044	.006	2.38 -3	1.366	.015	6.1 -6	.004	.017	3.95 -3	1.413	.039
	20	4.277 -4	.047	.003	1.34 -3	1.376	.005	1.32 -5	.008	.013	[illegible]	1.431	[illegible]
	25	1.976 -4	.049	.001	3.73 -4	1.380	.002	1.12 -5	.013	.007	[illegible]	1.442	[illegible]
	35	4.071 -5	.049	.000	2.96 -5	1.381	.000	2.57 -6	.020	.001	3.38 -4	1.451	.017
	50	4.940 -6	.050	.000	5.41 -7	1.381	.000	1.15 -5	.021	.000	[illegible]	1.452	[illegible]
3	0	5.893 -3	.000	.050	1.04 0	.000	.998	2.21 -6	.000	.021	[illegible]	[illegible]	[illegible]
	1	5.348 -3	.006	.044	3.51 -1	.635	.365	2.32 -6	.000	.021	3.57 -1	[illegible]	[illegible]
	2	4.847 -3	.011	.039	1.18 -1	.846	.144	1.82 -6	.000	.021	1.23 -1	[illegible]	[illegible]
	3	4.374 -3	.015	.034	3.98 -2	.921	.077	1.55 -6	.001	.020	4.41 -2	[illegible]	[illegible]
	4	3.942 -3	.019	.030	1.34 -2	.945	.053	1.40 -6	.001	.020	[illegible]	[illegible]	[illegible]
	5	3.543 -3	.023	.027	4.51 -3	.953	.044	1.37 -6	.001	.020	[illegible]	[illegible]	[illegible]
	10	1.949 -3	.037	.013	2.85 -3	.969	.029	2.17 -6	.002	.019	[illegible]	[illegible]	[illegible]
	15	9.169 -4	.044	.006	2.38 -3	.982	.015	6.16 -6	.004	.017	[illegible]	[illegible]	[illegible]
	20	4.277 -4	.047	.003	1.34 -3	.993	.005	1.32 -5	.008	.013	[illegible]	[illegible]	[illegible]
	25	1.978 -4	.049	.001	3.73 -4	.996	.002	1.12 -5	.013	.007	[illegible]	[illegible]	[illegible]
	35	4.071 -5	.049	.000	2.96 -5	.998	.000	2.67 -6	.020	.001	[illegible]	[illegible]	[illegible]
	50	4.940 -6	.050	.000	5.41 -7	.998	.000	1.15 -5	.021	.000	[illegible]	[illegible]	[illegible]
4	0	5.893 -3	.000	.050	7.80 -1	.000	.797	2.21 -6	.000	.021	[illegible]	[illegible]	[illegible]
	1	5.348 -3	.006	.044	2.78 -1	.487	.310	2.32 -6	.000	.021	[illegible]	[illegible]	[illegible]
	2	4.847 -3	.011	.039	9.35 -2	.661	.136	1.82 -6	.000	.021	[illegible]	[illegible]	[illegible]
	3	4.374 -3	.015	.034	3.54 -2	.723	.074	1.55 -6	.001	.020	[illegible]	[illegible]	[illegible]
	4	3.942 -3	.019	.030	1.26 -2	.745	.052	1.40 -6	.001	.020	[illegible]	[illegible]	[illegible]
	5	3.543 -3	.023	.027	4.51 -3	.753	.044	1.37 -6	.001	.020	[illegible]	[illegible]	[illegible]
	10	1.969 -3	.037	.013	2.85 -3	.768	.029	2.17 -6	.002	.019	[illegible]	[illegible]	[illegible]
	15	9.169 -4	.044	.006	2.38 -3	.782	.015	6.16 -6	.004	.017	[illegible]	[illegible]	[illegible]
	20	4.277 -4	.047	.003	1.34 -3	.792	.005	1.32 -5	.008	.013	[illegible]	[illegible]	[illegible]
	25	1.978 -4	.049	.001	3.73 -4	.795	.002	1.12 -5	.013	.007	[illegible]	[illegible]	[illegible]
	35	4.071 -5	.049	.000	2.96 -5	.797	.000	2.67 -6	.020	.001	[illegible]	[illegible]	[illegible]
	50	4.940 -6	.050	.000	5.41 -7	.797	.000	1.15 -5	.021	.000	[illegible]	[illegible]	[illegible]
5	0	5.893 -3	.000	.050	6.22 -1	.000	.671	2.21 -6	.000	.021	[illegible]	[illegible]	[illegible]
	1	5.348 -3	.006	.044	2.32 -1	.395	.276	2.32 -6	.000	.021	[illegible]	[illegible]	[illegible]
	2	4.847 -3	.011	.039	8.67 -2	.543	.128	1.82 -6	.000	.021	[illegible]	[illegible]	[illegible]
	3	4.374 -3	.015	.034	3.24 -2	.598	.073	1.55 -6	.001	.020	[illegible]	[illegible]	[illegible]
	4	3.942 -3	.019	.030	1.23 -2	.619	.052	1.40 -6	.001	.020	[illegible]	[illegible]	[illegible]
	5	3.543 -3	.023	.027	4.51 -3	.627	.044	1.37 -6	.001	.020	[illegible]	[illegible]	[illegible]
	10	1.969 -3	.037	.013	2.85 -3	.642	.029	2.17 -6	.002	.019	[illegible]	[illegible]	[illegible]
	15	9.169 -4	.044	.006	2.38 -3	.656	.015	6.16 -6	.004	.017	[illegible]	[illegible]	[illegible]
	20	4.277 -4	.047	.003	1.34 -3	.666	.005	1.32 -5	.008	.013	[illegible]	[illegible]	[illegible]
	25	1.978 -4	.049	.001	3.73 -4	.669	.002	1.12 -5	.013	.007	[illegible]	[illegible]	[illegible]
	35	4.071 -5	.049	.000	7.96 -5	.671	.000	2.67 -6	.020	.001	[illegible]	[illegible]	[illegible]
	50	4.940 -6	.050	.000	5.41 -7	.671	.000	1.15 -5	.021	.000	[illegible]	[illegible]	[illegible]

6	0	5.893 -3	.000	.050	5.17 -1	.600?	.505	2.21 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	1	5.348 -3	.006	.044	2.00 -1	.334?	.251	2.32 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	2	4.867 -3	.011	.039	7.76 -2	.463?	.122	1.42 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	3	4.374 -3	.015	.034	3.31 -2	.513?	.071	1.55 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	4	3.942 -3	.019	.030	1.16 -2	.533	.052	1.46 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	5	3.543 -3	.023	.027	4.51 -3	.540	.044	1.37 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	10	1.989 -3	.037	.013	2.05 -3	[illegible]	.029	2.17 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	15	9.369 -4	.044	.006	2.38 -3	[illegible]	.015	5.16 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	20	4.277 -4	.047	.003	1.34 -3	[illegible]	.005	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	25	1.928 -4	.049	.001	3.73 -4	[illegible]	.002	1.32 -3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	35	4.071 -5	.049	.000	2.96 -5	.583	.000	1.12 -3	.313	[illegible]	[illegible]	[illegible]	[illegible]
	50	4.940 -6	.050	.000	5.41 -7	.585	.000	2.47 -4	.321	[illegible]	[illegible]	[illegible]	[illegible]
								1.15 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	0	5.893 -3	.000	.050	3.84 -1	[illegible]	.472	2.21 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	1	5.348 -3	.006	.044	1.58 -1	.295	.217	2.32 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	2	4.867 -3	.011	.039	6.49 -2	.359	.112	1.42 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	3	4.374 -3	.015	.034	2.67 -2	[illegible]	.060	1.55 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	4	3.942 -3	.019	.030	1.10 -2	[illegible]	.052	1.46 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	5	3.543 -3	.023	.027	4.51 -3	.427	.044	1.37 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	10	1.989 -3	.037	.015	2.05 -3	.443	.029	2.17 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	15	9.369 -4	.044	.006	2.38 -3	.456	.015	5.16 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	20	4.277 -4	.047	.003	1.34 -3	.467	.005	1.32 -3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	25	1.928 -4	.049	.001	3.73 -4	[illegible]	.002	1.12 -3	.313	[illegible]	[illegible]	[illegible]	[illegible]
	35	4.071 -5	.049	.000	2.96 -5	[illegible]	.000	2.47 -4	.321	[illegible]	[illegible]	[illegible]	[illegible]
	50	4.940 -6	.050	.000	5.41 -7	[illegible]	.000	1.15 -5	.321	[illegible]	[illegible]	[illegible]	[illegible]
10	0	5.893 -3	.000	.050	3.06 -1	[illegible]	.462	2.21 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	1	5.348 -3	.006	.044	1.32 -1	.257	.195	2.32 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	2	4.867 -3	.011	.039	5.06 -2	.296	.106	1.42 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	3	4.374 -3	.015	.034	2.04 -2	.330	.066	1.55 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	4	3.942 -3	.019	.030	1.09 -2	.350	.052	1.46 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	5	3.543 -3	.023	.027	4.51 -3	.357	.044	1.37 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	10	1.989 -3	.037	.013	2.05 -3	.373	.029	2.17 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	15	9.369 -4	.044	.006	2.38 -3	.386	.015	5.16 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	20	4.277 -4	.047	.003	1.34 -3	.397	.005	1.32 -3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	25	1.928 -4	.049	.001	3.73 -4	.400	.002	1.12 -3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	35	4.071 -5	.049	.000	2.96 -5	.402	.000	2.47 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	50	4.940 -6	.050	.000	5.41 -7	.402	.000	1.19 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	0	5.893 -3	.000	.050	2.33 -1	[illegible]	[illegible]	2.21 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	1	5.348 -3	.006	.044	1.06 -1	[illegible]	.173	2.32 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	2	4.867 -3	.011	.039	4.41 -2	.235	.100	1.42 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	3	4.374 -3	.015	.034	2.19 -2	.268	[illegible]	1.55 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	4	3.942 -3	.019	.030	9.93 -3	[illegible]	[illegible]	1.46 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	5	3.543 -3	.023	.027	4.51 -3	.296	.044	1.37 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	10	1.989 -3	.037	.013	2.05 -3	.306	.029	2.17 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	15	9.369 -4	.044	.006	2.38 -3	.319	.015	5.16 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	20	4.277 -4	.047	.003	1.34 -3	.329	.005	1.32 -3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	25	1.928 -4	.049	.001	3.73 -4	.333	.002	1.12 -3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	35	4.071 -5	.049	.000	2.96 -5	.336	.000	2.47 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	50	4.940 -6	.050	.000	5.41 -7	.336	.000	1.15 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table 3.14. Parameters at 9.70 Microns

Mod. Type	Alt. (km)	Rayleigh atten. coeff. (km^{-1})	Rayleigh optical thick. (0-h)	Rayleigh optical thick. (h-∞)	Aerosol atten. coeff. (km^{-1})	Aerosol optical thick. (0-h)	Aerosol optical thick. (h-∞)	Ozone absorp. coeff. (km^{-1})	Ozone optical thick. (0-h)	Ozone optical thick. (h-∞)	Ext. coeff. (km^{-1})	Ext. optical thick. (0-h)	Ext. optical thick. (h-∞)
V_n	h	ϵ_r	τ_r	τ'_r	ϵ_p	τ_p	τ'_p	ϵ_z	τ_z	τ'_z	ϵ_{ext}	τ_{ext}	τ'_{ext}
2	0	4.365 -3	.000	.037	1.47 0	.000	1.297	8.10 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	1	3.961 -3	.004	.033	4.57 -1	.866	.430	7.50 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	2	3.586 -3	.008	.029	1.42 -1	1.136	.160	6.74 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	3	3.240 -3	.011	.026	4.43 -2	1.220	.077	5.75 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	4	2.919 -3	.014	.022	1.36 -2	1.246	.056	5.20 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	5	2.624 -3	.017	.020	4.29 -3	1.256	.042	5.30 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	10	1.473 -3	.027	.010	2.71 -3	1.269	.027	8.35 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	15	6.939 -4	.032	.006	2.26 -3	1.282	.015	2.20 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	20	3.168 -4	.035	.002	1.27 -3	1.292	.005	3.77 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	25	1.478 -4	.036	.001	3.55 -4	1.295	.001	4.14 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	35	3.016 -5	.037	.000	2.81 -5	1.257	.000	9.91 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	50	3.659 -6	.037	.000	5.14 -7	1.257	.000	4.28 -6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	0	4.365 -3	.000	.037	9.76 -1	.000	.932	8.10 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	1	3.961 -3	.004	.033	3.30 -1	.565	.352	7.50 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	2	3.586 -3	.008	.029	1.11 -1	.756	.161	6.74 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	3	3.240 -3	.011	.026	3.76 -2	.804	.073	5.75 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	4	2.919 -3	.014	.022	1.27 -2	.887	.056	5.20 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	5	2.624 -3	.017	.020	4.29 -3	.855	.042	5.30 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	10	1.473 -3	.027	.010	2.71 -3	.916	.027	8.35 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	15	6.939 -4	.032	.006	2.26 -3	.922	.015	2.20 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	20	3.168 -4	.035	.002	1.27 -3	.932	.005	3.77 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	25	1.478 -4	.036	.001	3.55 -4	.935	.001	4.14 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	35	3.016 -5	.037	.000	2.81 -5	.937	.000	9.91 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	50	3.659 -6	.037	.000	5.14 -7	.937	.000	4.28 -6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	0	4.365 -3	.000	.037	7.30 -1	.000	.749	8.10 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	1	3.961 -3	.004	.033	2.61 -1	.456	.292	7.50 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	2	3.586 -3	.008	.029	9.35 -2	.625	.124	6.74 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	3	3.240 -3	.011	.026	3.35 -2	.678	.071	5.75 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	4	2.919 -3	.014	.022	1.20 -2	.699	.050	5.20 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	5	2.624 -3	.017	.020	4.29 -3	.716	.042	5.30 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	10	1.473 -3	.027	.010	2.71 -3	.721	.027	8.35 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	15	6.939 -4	.032	.006	2.26 -3	.734	.015	2.20 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	20	3.168 -4	.035	.002	1.27 -3	.746	.005	3.77 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	25	1.478 -4	.036	.001	3.55 -4	.747	.001	4.14 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	35	3.016 -5	.037	.000	2.81 -5	.749	.000	9.91 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	50	3.659 -6	.037	.000	5.14 -7	.749	.000	4.28 -6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	0	4.365 -3	.000	.037	5.82 -1	.000	.630	8.10 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	1	3.961 -3	.004	.033	2.18 -1	.371	.259	7.50 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	2	3.586 -3	.008	.029	8.16 -2	.509	.121	6.74 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	3	3.240 -3	.011	.026	3.06 -2	.561	.069	5.75 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	4	2.919 -3	.014	.022	1.15 -2	.581	.050	5.20 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	5	2.624 -3	.017	.020	4.29 -3	.588	.042	5.30 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	10	1.473 -3	.027	.010	2.71 -3	.603	.027	8.35 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	15	6.939 -4	.032	.006	2.26 -3	.616	.015	2.20 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	20	3.168 -4	.035	.002	1.27 -3	.626	.005	3.77 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	25	1.478 -4	.036	.001	3.55 -4	.629	.001	4.14 -4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	35	3.016 -5	.037	.000	2.81 -5	.630	.000	9.91 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	50	3.659 -6	.037	.000	5.14 -7	.630	.000	4.28 -6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

6	0	4.365 -3	.000	.037	4.84 -1	.460	.550	8.19 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	1	3.961 -3	.004	.033	1.88 -1	.513	.237	7.55 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	2	3.566 -3	.008	.029	7.51 -2	.496	.115	6.76 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	3	3.740 -3	.011	.026	2.84 -2	.482	[illegible]	5.75 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	4	2.919 -3	.014	.022	1.13 -2	.500	[illegible]	5.23 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	5	2.624 -3	.017	.020	4.29 -3	.507	.042	5.08 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	10	1.473 -3	.027	.010	2.71 -5	.522	.027	8.35 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	15	6.939 -4	.032	.004	2.26 -5	.535	.015	2.24 -6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	20	3.166 -4	.035	.002	1.27 -5	.545	.005	3.77 -6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	25	1.478 -4	.036	.001	3.55 -6	.546	.001	4.16 -6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	35	3.016 -5	.037	.000	2.81 -5	.549	.000	4.91 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	50	3.659 -6	.037	.000	5.14 -7	.550	.000	4.29 -6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	0	4.365 -3	.000	.037	3.60 -1	.000	.444	8.19 -5	[illegible]	[illegible]	[illegible]	.380	.448
	1	3.961 -3	.004	.033	1.48 -1	.239	.205	7.55 -5	[illegible]	[illegible]	[illegible]	.263	.245
	2	3.566 -3	.008	.029	6.12 -2	.337	.107	6.76 -5	[illegible]	[illegible]	[illegible]	.365	.143
	3	3.740 -3	.011	.026	2.52 -2	.378	[illegible]	5.75 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	4	2.919 -3	.014	.022	1.04 -2	.394	[illegible]	5.23 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	5	2.624 -3	.017	.020	4.29 -3	.402	.042	5.08 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	10	1.473 -3	.027	.010	2.71 -5	.416	.027	8.35 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	15	6.939 -4	.032	.004	2.26 -5	.429	.015	2.24 -6	[illegible]	[illegible]	[illegible]	.463	[illegible]
	20	3.166 -4	.035	.002	1.27 -5	.439	.005	3.77 -6	[illegible]	[illegible]	[illegible]	.476	.112
	25	1.478 -4	.036	.001	3.55 -6	.442	.001	4.16 -6	[illegible]	[illegible]	[illegible]	.483	[illegible]
	35	3.016 -5	.037	.000	2.81 -5	.443	.000	4.91 -5	[illegible]	[illegible]	[illegible]	.487	[illegible]
	50	3.659 -6	.037	.000	5.14 -7	.444	.000	4.29 -6	[illegible]	[illegible]	[illegible]	.488	[illegible]
10	0	4.365 -3	.000	.037	2.86 -1	.000	.370	8.19 -5	[illegible]	[illegible]	[illegible]	[illegible]	.423
	1	3.961 -3	.004	.033	1.24 -1	.196	.186	7.55 -5	[illegible]	[illegible]	[illegible]	[illegible]	.225
	2	3.566 -3	.008	.029	5.34 -2	.277	.131	6.76 -5	[illegible]	[illegible]	[illegible]	[illegible]	.137
	3	3.740 -3	.011	.026	2.30 -2	.313	.065	5.75 -5	[illegible]	[illegible]	[illegible]	.325	[illegible]
	4	2.919 -3	.014	.022	9.94 -3	.329	.049	5.23 -5	[illegible]	[illegible]	[illegible]	.344	.079
	5	2.624 -3	.017	.020	4.79 -3	.336	.042	5.08 -5	[illegible]	[illegible]	[illegible]	.353	[illegible]
	10	1.473 -3	.027	.010	2.71 -5	.351	.027	8.35 -5	[illegible]	[illegible]	[illegible]	.370	[illegible]
	15	6.939 -4	.032	.004	2.26 -5	.363	.015	2.24 -6	[illegible]	[illegible]	[illegible]	.387	[illegible]
	20	3.166 -4	.035	.002	1.27 -5	.373	.005	3.77 -6	[illegible]	[illegible]	[illegible]	.401	.012
	25	1.478 -4	.036	.001	3.55 -6	.377	.001	4.16 -6	[illegible]	[illegible]	[illegible]	.417	[illegible]
	35	3.016 -5	.037	.000	2.81 -5	.378	.000	4.91 -5	[illegible]	[illegible]	[illegible]	.422	[illegible]
	50	3.659 -6	.037	.000	5.14 -7	.378	.000	4.29 -6	[illegible]	[illegible]	[illegible]	.429	[illegible]
13	0	4.365 -3	.000	.037	7.18 -1	.080	.315	8.19 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	1	3.961 -3	.004	.033	9.95 -2	.151	.163	7.58 -5	[illegible]	[illegible]	[illegible]	[illegible]	.224
	2	3.566 -3	.008	.029	4.53 -2	.225	.095	6.76 -5	[illegible]	[illegible]	[illegible]	.228	.134
	3	3.740 -3	.011	.026	2.07 -2	.252	.063	5.75 -5	[illegible]	[illegible]	[illegible]	.253	[illegible]
	4	2.919 -3	.014	.022	9.61 -3	.266	.049	5.23 -5	[illegible]	[illegible]	[illegible]	[illegible]	.079
	5	2.624 -3	.017	.020	4.79 -3	.272	.042	5.08 -5	[illegible]	[illegible]	[illegible]	.298	[illegible]
	10	1.473 -3	.027	.010	2.71 -5	.287	.027	8.35 -5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	15	6.939 -4	.032	.004	2.26 -5	.300	.015	2.24 -6	[illegible]	[illegible]	[illegible]	.336	[illegible]
	20	3.166 -4	.035	.002	1.27 -5	.310	.005	3.77 -6	[illegible]	[illegible]	[illegible]	.347	.012
	25	1.478 -4	.036	.001	3.55 -6	.313	.001	4.16 -6	[illegible]	[illegible]	[illegible]	.354	[illegible]
	35	3.016 -5	.037	.000	2.81 -5	.315	.000	4.91 -5	[illegible]	[illegible]	[illegible]	.356	[illegible]
	50	3.659 -6	.037	.000	5.14 -7	.315	.000	4.29 -6	[illegible]	[illegible]	[illegible]	.359	[illegible]

Table 3.15. Parameters at 0.80 Microns

Met. Rge (km) V_n	Alt. (km) h	Rayleigh atten. coeff. (km⁻¹)	Rayleigh optical thick. (0-h)	Rayleigh optical thick. (h-∞)	Aerosol atten. coeff. (km⁻¹)	Aerosol optical thick. (0-h)	Aerosol optical thick. (h-∞)	Ozone absorp. coeff. (km⁻¹)	Ozone optical thick. (0-h)	Ozone optical thick. (h-∞)	Ext coeff (km⁻¹)	Ext optical thick. (0-h)	Ext optical thick. (h-∞)
2	0	2.544 -3	.000	.021	1.29 0	.000	1.153	3.56 -5	.000	.003	1.29 0	.000	1.178
	1	2.309 -3	.002	.019	4.06 -1	.764	.389	3.26 -5	.000	.003	4.09 -1	.766	.411
	2	2.091 -3	.005	.017	1.28 -1	1.005	.148	2.93 -5	.000	.003	1.30 -1	1.013	.168
	3	1.889 -3	.007	.015	4.05 -2	1.081	.071	2.53 -5	.000	.003	4.26 -2	1.080	.098
	4	1.707 -3	.008	.013	1.28 -2	1.105	.047	2.26 -5	.000	.003	1.46 -2	1.114	.064
	5	1.540 -3	.010	.011	4.04 -3	1.113	.040	2.21 -5	.000	.003	5.59 -3	1.123	.055
	10	8.589 -4	.016	.006	2.55 -3	1.127	.026	3.53 -5	.000	.003	3.44 -3	1.143	.035
	15	4.045 -4	.019	.003	2.13 -3	1.139	.014	9.96 -5	.000	.003	2.63 -3	1.154	.024
	20	1.847 -4	.020	.001	1.20 -3	1.148	.005	1.66 -4	.001	.003	1.55 -3	1.165	.014
	25	8.326 -5	.021	.001	3.34 -4	1.151	.001	1.89 -4	.001	.002	5.97 -4	1.174	.008
	35	1.758 -5	.021	.000	2.64 -5	1.153	.000	4.31 -5	.002	.001	8.71 -5	1.177	.003
	50	2.133 -6	.021	.000	4.84 -7	1.153	.000	1.46 -6	.003	.000	4.48 -6	1.178	.000
3	0	2.544 -3	.000	.021	6.55 -1	.000	.834	3.56 -5	.000	.003	6.58 -1	.000	.859
	1	2.309 -3	.002	.019	2.93 -1	.525	.310	3.26 -5	.000	.003	2.95 -1	.527	.332
	2	2.091 -3	.005	.017	1.00 -1	.765	.130	2.93 -5	.000	.003	1.02 -1	.708	.151
	3	1.889 -3	.007	.015	3.44 -2	.766	.066	2.53 -5	.000	.003	3.63 -2	.773	.086
	4	1.707 -3	.008	.013	1.18 -2	.787	.047	2.26 -5	.000	.003	1.35 -2	.796	.063
	5	1.540 -3	.010	.011	4.04 -3	.795	.040	2.21 -5	.000	.003	5.59 -3	.805	.055
	10	8.589 -4	.016	.006	2.55 -3	.809	.026	3.53 -5	.000	.003	3.44 -3	.825	.034
	15	4.045 -4	.019	.003	2.13 -3	.821	.014	9.96 -5	.000	.003	2.63 -3	.840	.019
	20	1.847 -4	.020	.001	1.20 -3	.830	.005	1.66 -4	.001	.003	1.55 -3	.851	.008
	25	8.326 -5	.021	.001	3.34 -4	.833	.001	1.89 -4	.001	.002	5.97 -4	.856	.003
	35	1.758 -5	.021	.000	2.64 -5	.834	.000	4.31 -5	.002	.001	8.71 -5	.859	.001
	50	2.133 -6	.021	.000	4.84 -7	.834	.000	1.46 -6	.003	.000	4.44 -6	.859	.000
4	0	2.544 -3	.000	.021	6.40 -1	.000	.667	3.56 -5	.000	.003	6.43 -1	.000	.692
	1	2.309 -3	.002	.019	2.32 -1	.402	.265	3.26 -5	.000	.003	2.35 -1	.405	.287
	2	2.091 -3	.005	.017	6.43 -2	.548	.119	2.93 -5	.000	.003	6.65 -2	.553	.139
	3	1.889 -3	.007	.015	3.06 -2	.601	.066	2.53 -5	.000	.003	3.25 -2	.608	.084
	4	1.707 -3	.008	.013	1.11 -2	.621	.047	2.26 -5	.000	.003	1.28 -2	.629	.063
	5	1.540 -3	.010	.011	4.04 -3	.628	.040	2.21 -5	.000	.003	5.59 -3	.638	.055
	10	8.589 -4	.016	.006	2.55 -3	.642	.026	3.53 -5	.000	.003	3.44 -3	.658	.034
	15	4.045 -4	.019	.003	2.13 -3	.654	.014	9.96 -5	.000	.003	2.63 -3	.673	.019
	20	1.847 -4	.020	.001	1.20 -3	.663	.005	1.66 -4	.001	.003	1.55 -3	.684	.008
	25	8.326 -5	.021	.001	3.34 -4	.666	.001	1.89 -4	.001	.002	5.97 -4	.689	.003
	35	1.758 -5	.021	.000	2.64 -5	.667	.000	4.31 -5	.002	.001	8.71 -5	.692	.001
	50	2.133 -6	.021	.000	4.84 -7	.667	.000	1.46 -6	.003	.000	4.48 -6	.692	.000
5	0	2.544 -3	.000	.021	5.10 -1	.000	.563	3.56 -5	.000	.003	5.13 -1	.000	.588
	1	2.309 -3	.002	.019	1.94 -1	.327	.236	3.26 -5	.000	.003	1.96 -1	.329	.259
	2	2.091 -3	.005	.017	7.36 -2	.451	.112	2.93 -5	.000	.003	7.57 -2	.456	.132
	3	1.889 -3	.007	.015	2.80 -2	.498	.065	2.53 -5	.000	.003	2.99 -2	.505	.083
	4	1.707 -3	.008	.013	1.06 -2	.516	.047	2.26 -5	.000	.003	1.23 -2	.525	.063
	5	1.540 -3	.010	.011	4.04 -3	.523	.040	2.21 -5	.000	.003	5.59 -3	.533	.055
	10	8.589 -4	.016	.006	2.55 -3	.537	.026	3.53 -5	.000	.003	3.44 -3	.553	.034
	15	4.045 -4	.019	.003	2.13 -3	.549	.014	9.96 -5	.000	.003	2.63 -3	.568	.019
	20	1.847 -4	.020	.001	1.20 -3	.558	.005	1.66 -4	.001	.003	1.55 -3	.580	.009
	25	8.326 -5	.021	.001	3.34 -4	.561	.001	1.89 -4	.001	.002	5.97 -4	.584	.004
	35	1.758 -5	.021	.000	2.64 -5	.563	.000	4.31 -5	.002	.001	8.71 -5	.587	.002
	50	2.133 -6	.021	.000	4.84 -7	.563	.000	1.46 -6	.003	.000	4.45 -6	.588	.000

6	0	2.544 -3	.000	.021	4.74 -1	.000	.491	3.56 -5	.300	.303	4.27 -1	.000	.516
	1	2.309 -3	.002	.019	1.47 -1	.276	.215	3.26 -5	.300	.303	1.69 -1	.275	.237
	2	2.091 -3	.005	.017	6.59 -2	.385	.106	2.93 -5	.300	.303	6.80 -2	.389	.126
	3	1.889 -3	.007	.015	2.60 -2	.428	.063	2.53 -5	.300	.303	2.79 -2	.436	.262
	4	1.702 -3	.008	.013	1.62 -2	.444	.046	2.26 -5	.300	.303	1.20 -2	.453	.263
	5	1.530 -3	.010	.011	4.04 -3	.451	.040	2.21 -5	.300	.303	5.59 -3	.461	.355
	10	8.589 -4	.016	.006	2.55 -3	.465	.026	3.50 -5	.300	.303	3.44 -3	.481	.334
	15	4.045 -4	.019	.003	2.13 -3	.477	.014	9.94 -5	.301	.303	2.63 -3	.497	.319
	20	1.847 -4	.020	.001	1.20 -3	.486	.005	1.64 -4	.301	.302	1.55 -3	.508	.304
	25	8.326 -5	.021	.001	3.34 -4	.490	.001	1.63 -4	.302	.301	5.97 -4	.513	.303
	35	1.758 -5	.021	.000	2.64 -5	.491	.000	4.31 -5	.303	.300	6.71 -5	.515	.325
	50	2.133 -6	.021	.000	4.84 -7	.491	.000	1.86 -6	.303	.300	4.48 -6	.516	.330
8	0	2.544 -3	.000	.021	3.15 -1	.000	.397	3.56 -5	.300	.303	3.18 -1	.000	.422
	1	2.309 -3	.002	.019	1.32 -1	.210	.186	3.26 -5	.300	.303	1.34 -1	.213	.239
	2	2.091 -3	.005	.017	5.52 -2	.258	.098	2.93 -5	.300	.303	5.73 -2	.393	.119
	3	1.889 -3	.007	.015	2.31 -2	.335	.062	2.53 -5	.300	.303	2.50 -2	.342	.303
	4	1.702 -3	.008	.013	9.45 -3	.351	.046	2.26 -5	.300	.303	1.16 -2	.359	.363
	5	1.530 -3	.010	.011	4.04 -3	.357	.040	2.21 -5	.300	.303	5.59 -3	.367	.355
	10	8.589 -4	.016	.006	2.55 -3	.371	.026	3.50 -5	.300	.303	3.44 -3	.387	.334
	15	4.045 -4	.019	.003	2.13 -3	.383	.014	9.94 -5	.301	.303	2.63 -3	.403	.319
	20	1.847 -4	.020	.001	1.20 -3	.392	.005	1.64 -4	.301	.302	1.55 -3	.414	.305
	25	8.326 -5	.021	.001	3.34 -4	.396	.001	1.63 -4	.302	.301	5.97 -4	.419	.303
	35	1.758 -5	.021	.000	2.64 -5	.397	.000	4.31 -5	.303	.300	8.71 -5	.421	.303
	50	2.133 -6	.021	.000	4.84 -7	.397	.000	1.86 -6	.303	.300	4.48 -6	.422	.303
10	0	2.544 -3	.000	.021	2.51 -1	.000	.339	3.56 -5	.300	.303	2.54 -1	.000	.364
	1	2.309 -3	.002	.019	1.10 -1	.171	.168	3.26 -5	.300	.303	1.12 -1	.175	.196
	2	2.091 -3	.005	.017	4.81 -2	.246	.093	2.93 -5	.300	.303	5.02 -2	.250	.113
	3	1.889 -3	.007	.015	2.11 -2	.278	.060	2.50 -5	.300	.303	2.30 -2	.286	.079
	4	1.702 -3	.008	.013	9.22 -3	.293	.046	2.26 -5	.300	.303	1.09 -2	.301	.362
	5	1.530 -3	.010	.011	4.04 -3	.299	.040	2.21 -5	.300	.303	5.59 -3	.309	.355
	10	8.589 -4	.016	.006	2.55 -3	.313	.026	3.50 -5	.300	.303	3.44 -3	.329	.334
	15	4.045 -4	.019	.003	2.13 -3	.325	.014	9.94 -5	.301	.303	2.63 -3	.345	.319
	20	1.847 -4	.020	.001	1.20 -3	.334	.005	1.64 -4	.301	.302	1.55 -3	.356	.306
	25	8.326 -5	.021	.001	3.34 -4	.337	.001	1.86 -4	.302	.301	5.97 -4	.361	.303
	35	1.758 -5	.021	.000	2.64 -5	.339	.000	4.31 -5	.303	.300	8.71 -5	.363	.300
	50	2.133 -6	.021	.000	4.84 -7	.339	.000	1.66 -6	.303	.300	4.48 -6	.364	.300
13	0	2.544 -3	.000	.021	1.91 -1	.000	.283	3.55 -5	.306	.303	1.96 -1	.000	.307
	1	2.309 -3	.002	.019	8.85 -2	.133	.149	3.26 -5	.300	.303	9.38 -2	.136	.172
	2	2.091 -3	.005	.017	4.09 -2	.155	.088	2.93 -5	.300	.303	4.35 -2	.206	.198
	3	1.889 -3	.007	.015	1.89 -2	.224	.059	2.53 -5	.300	.303	2.08 -2	.230	.377
	4	1.702 -3	.008	.013	8.73 -3	.237	.046	2.26 -5	.300	.303	1.05 -2	.245	.362
	5	1.530 -3	.010	.011	4.04 -3	.243	.049	2.21 -5	.300	.303	5.59 -3	.253	.355
	10	8.589 -4	.016	.006	2.55 -3	.257	.026	3.50 -5	.300	.303	3.44 -3	.273	.334
	15	4.045 -4	.019	.003	2.13 -3	.269	.014	9.94 -5	.301	.303	2.63 -3	.289	.319
	20	1.847 -4	.020	.001	1.20 -3	.278	.005	1.64 -4	.301	.302	1.55 -3	.300	.306
	25	8.326 -5	.021	.001	3.34 -4	.281	.001	1.63 -4	.302	.301	5.97 -4	.304	.303
	35	1.758 -5	.021	.000	2.64 -5	.282	.000	4.31 -5	.303	.300	8.71 -5	.307	.302
	50	2.133 -6	.021	.000	4.84 -7	.283	.000	1.86 -6	.303	.300	4.48 -6	.307	.306

Table 3.16. Parameters at 0.90 Microns

Met. Rge (km) V_n	Alt. (km) h	Rayleigh atten. coeff. (km^{-1}) β_r	Rayleigh optical thick. (0-h) τ_r	Rayleigh optical thick. (h-∞) τ_r^*	Aerosol atten. coeff. (km^{-1}) β_p	Aerosol optical thick. (0-h) τ_p	Aerosol optical thick. (h-∞) τ_p^*	Ozone absorp. coeff. (km^{-1}) β_3	Ozone optical thick. (0-h) τ_3	Ozone optical thick. (h-∞) τ_3^*	Ext. coeff (km^{-1}) β_{ext}	Ext optical thick. (0-h) τ_{ext}	Ext optical thick. (h-∞) τ_{ext}^*
2	0	1.583 -3	.000	.013	1.17 0	.000	1.053	0.	.000	.000	1.17 0	.000	1.067
	1	1.436 -3	.002	.012	3.71 -1	.695	.359	0.	.000	.000	3.73 -1	.696	.371
	2	1.300 -3	.003	.010	1.18 -1	.916	.138	0.	.000	.000	1.20 -1	.919	.148
	3	1.175 -3	.004	.009	3.76 -2	.986	.067	0.	.000	.000	3.88 -2	.990	.076
	4	1.059 -3	.005	.008	1.20 -2	1.009	.045	0.	.000	.000	1.30 -2	1.014	.053
	5	9.514 -4	.006	.007	3.81 -3	1.016	.036	0.	.000	.000	4.76 -3	1.022	.045
	10	5.342 -4	.010	.004	2.41 -3	1.029	.024	0.	.000	.000	2.94 -3	1.039	.028
	15	2.516 -4	.012	.002	2.01 -3	1.040	.013	0.	.000	.000	2.26 -3	1.052	.015
	20	1.149 -4	.013	.001	1.13 -3	1.049	.004	0.	.000	.000	1.25 -3	1.062	.005
	25	5.178 -5	.013	.000	3.15 -4	1.052	.001	0.	.000	.000	3.67 -4	1.065	.002
	35	1.093 -5	.013	.000	2.50 -5	1.053	.000	0.	.000	.000	3.59 -5	1.067	.000
	50	1.327 -6	.013	.000	4.57 -7	1.053	.000	0.	.000	.000	1.78 -6	1.067	.000
3	0	1.583 -3	.000	.013	7.75 -1	.000	.763	0.	.000	.000	7.77 -1	.000	.777
	1	1.436 -3	.002	.012	2.68 -1	.477	.286	0.	.000	.000	2.69 -1	.479	.298
	2	1.300 -3	.003	.010	9.25 -2	.642	.121	0.	.000	.000	9.38 -2	.645	.132
	3	1.175 -3	.004	.009	3.20 -2	.699	.064	0.	.000	.000	3.31 -2	.703	.073
	4	1.059 -3	.005	.008	1.10 -2	.719	.044	0.	.000	.000	1.21 -2	.724	.053
	5	9.514 -4	.006	.007	3.81 -3	.726	.036	0.	.000	.000	4.76 -3	.732	.045
	10	5.342 -4	.010	.004	2.41 -3	.739	.024	0.	.000	.000	2.94 -3	.749	.028
	15	2.516 -4	.012	.002	2.01 -3	.750	.013	0.	.000	.000	2.26 -3	.762	.015
	20	1.149 -4	.013	.001	1.13 -3	.759	.004	0.	.000	.000	1.25 -3	.772	.005
	25	5.178 -5	.013	.000	3.15 -4	.762	.001	0.	.000	.000	3.67 -4	.775	.002
	35	1.093 -5	.013	.000	2.50 -5	.763	.000	0.	.000	.000	3.59 -5	.776	.000
	50	1.327 -6	.013	.000	4.57 -7	.763	.000	0.	.000	.000	1.78 -6	.777	.000
4	0	1.583 -3	.000	.013	5.80 -1	.000	.611	0.	.000	.000	5.82 -1	.000	.624
	1	1.436 -3	.002	.012	2.12 -1	.366	.245	0.	.000	.000	2.14 -1	.367	.257
	2	1.300 -3	.003	.010	7.77 -2	.500	.111	0.	.000	.000	7.90 -2	.503	.122
	3	1.175 -3	.004	.009	2.85 -2	.549	.062	0.	.000	.000	2.96 -2	.553	.071
	4	1.059 -3	.005	.008	1.04 -2	.567	.044	0.	.000	.000	1.15 -2	.572	.052
	5	9.514 -4	.006	.007	3.81 -3	.573	.038	0.	.000	.000	4.76 -3	.580	.045
	10	5.342 -4	.010	.004	2.41 -3	.587	.024	0.	.000	.000	2.94 -3	.597	.028
	15	2.516 -4	.012	.002	2.01 -3	.598	.013	0.	.000	.000	2.26 -3	.610	.015
	20	1.149 -4	.013	.001	1.13 -3	.607	.004	0.	.000	.000	1.25 -3	.619	.005
	25	5.178 -5	.013	.000	3.15 -4	.610	.001	0.	.000	.000	3.67 -4	.623	.002
	35	1.093 -5	.013	.000	2.50 -5	.611	.000	0.	.000	.000	3.59 -5	.624	.000
	50	1.327 -6	.013	.000	4.57 -7	.611	.000	0.	.000	.000	1.78 -6	.624	.000
5	0	1.583 -3	.000	.013	4.62 -1	.000	.515	0.	.000	.000	4.64 -1	.000	.529
	1	1.436 -3	.002	.012	1.77 -1	.297	.218	0.	.000	.000	1.79 -1	.299	.233
	2	1.300 -3	.003	.010	6.78 -2	.411	.104	0.	.000	.000	6.91 -2	.414	.115
	3	1.175 -3	.004	.009	2.60 -2	.455	.061	0.	.000	.000	2.72 -2	.459	.070
	4	1.059 -3	.005	.008	9.95 -3	.471	.044	0.	.000	.000	1.10 -2	.477	.052
	5	9.514 -4	.006	.007	3.81 -3	.478	.038	0.	.000	.000	4.76 -3	.484	.045
	10	5.342 -4	.010	.004	2.41 -3	.491	.024	0.	.000	.000	2.94 -3	.501	.028
	15	2.516 -4	.012	.002	2.01 -3	.502	.013	0.	.000	.000	2.26 -3	.514	.015
	20	1.149 -4	.013	.001	1.13 -3	.511	.004	0.	.000	.000	1.25 -3	.524	.005
	25	5.178 -5	.013	.000	3.15 -4	.514	.001	0.	.000	.000	3.67 -4	.527	.002
	35	1.093 -5	.013	.000	2.50 -5	.515	.000	0.	.000	.000	3.59 -5	.529	.000
	50	1.327 -6	.013	.000	4.57 -7	.515	.000	0.	.000	.000	1.78 -6	.529	.000

6	0	1.583 -3	.000	.013	3.84 -1	.000	.450	0.	.000	.000	3.86 -1	.000	.463
	1	1.436 -3	.002	.012	1.53 -1	.251	.199	0.	.000	.000	1.54 -1	.252	.211
	2	1.300 -3	.003	.010	6.07 -2	.351	.099	0.	.000	.000	6.20 -2	.354	.110
	3	1.175 -3	.004	.009	2.41 -2	.390	.060	0.	.000	.000	2.53 -2	.394	.069
	4	1.059 -3	.005	.008	9.59 -3	.406	.044	0.	.000	.000	1.07 -2	.411	.052
	5	9.514 -4	.006	.007	3.81 -3	.412	.038	0.	.000	.000	4.76 -3	.419	.045
	10	5.342 -4	.010	.004	2.41 -3	.426	.024	0.	.000	.000	2.94 -3	.436	.028
	15	2.516 -4	.012	.002	2.01 -3	.437	.013	0.	.000	.000	2.26 -3	.449	.015
	20	1.149 -4	.013	.001	1.13 -3	.446	.004	0.	.000	.000	1.25 -3	.456	.005
	25	5.178 -5	.013	.000	3.15 -4	.449	.001	0.	.000	.000	3.67 -4	.462	.002
	35	1.093 -5	.013	.000	2.50 -5	.450	.000	0.	.000	.000	3.59 -5	.463	.000
	50	1.327 -6	.013	.000	4.57 -7	.450	.000	0.	.000	.000	1.78 -6	.463	.000
8	0	1.583 -3	.000	.013	2.86 -1	.000	.364	0.	.000	.000	2.87 -1	.000	.378
	1	1.436 -3	.002	.012	1.21 -1	.191	.173	0.	.000	.000	1.22 -1	.193	.185
	2	1.300 -3	.003	.010	5.08 -2	.272	.092	0.	.000	.000	5.21 -2	.275	.103
	3	1.175 -3	.004	.009	2.14 -2	.306	.056	0.	.000	.000	2.25 -2	.310	.067
	4	1.059 -3	.005	.008	9.04 -3	.321	.044	0.	.000	.000	1.01 -2	.326	.052
	5	9.514 -4	.006	.007	3.81 -3	.327	.038	0.	.000	.000	4.75 -3	.333	.045
	10	5.342 -4	.010	.004	2.41 -3	.340	.024	0.	.000	.000	2.94 -3	.350	.029
	15	2.516 -4	.012	.002	2.01 -3	.351	.013	0.	.000	.000	2.26 -3	.363	.015
	20	1.149 -4	.013	.001	1.13 -3	.360	.004	0.	.000	.000	1.25 -3	.372	.005
	25	5.178 -5	.013	.000	3.15 -4	.363	.001	0.	.000	.000	3.67 -4	.376	.002
	35	1.093 -5	.013	.000	2.50 -5	.364	.000	0.	.000	.000	3.59 -5	.377	.000
	50	1.327 -6	.013	.000	4.57 -7	.364	.000	0.	.000	.000	1.79 -6	.378	.000
10	0	1.583 -3	.000	.013	2.28 -1	.000	.311	0.	.000	.000	2.29 -1	.000	.325
	1	1.436 -3	.002	.012	1.00 -1	.155	.156	0.	.000	.000	1.02 -1	.157	.169
	2	1.400 -3	.003	.010	4.43 -2	.224	.087	0.	.000	.000	4.56 -2	.227	.098
	3	1.175 -3	.004	.009	1.96 -2	.254	.057	0.	.000	.000	2.07 -2	.258	.066
	4	1.059 -3	.005	.008	8.64 -3	.268	.043	0.	.000	.000	9.70 -3	.273	.052
	5	9.514 -4	.006	.007	3.81 -3	.274	.038	0.	.000	.000	4.76 -3	.280	.045
	10	5.342 -4	.010	.004	2.41 -3	.287	.024	0.	.000	.000	2.94 -3	.297	.028
	15	2.516 -4	.012	.002	2.01 -3	.298	.013	0.	.000	.000	2.25 -3	.310	.015
	20	1.149 -4	.013	.001	1.13 -3	.307	.004	0.	.000	.000	1.25 -3	.319	.005
	25	5.178 -5	.013	.000	3.25 -4	.310	.001	0.	.000	.000	3.67 -4	.323	.002
	35	1.093 -5	.013	.000	2.50 -5	.311	.000	0.	.000	.000	3.59 -5	.324	.000
	50	1.327 -6	.013	.000	4.57 -7	.311	.000	0.	.000	.000	1.78 -6	.325	.000
13	0	1.583 -3	.000	.013	1.74 -1	.000	.260	0.	.000	.000	1.75 -1	.000	.273
	1	1.436 -3	.002	.012	8.09 -2	.121	.138	0.	.000	.000	8.23 -2	.123	.150
	2	1.300 -3	.003	.010	3.77 -2	.178	.082	0.	.000	.000	3.90 -2	.181	.092
	3	1.175 -3	.004	.009	1.76 -2	.204	.056	0.	.000	.000	1.87 -2	.208	.065
	4	1.059 -3	.005	.008	8.18 -3	.217	.043	0.	.000	.000	9.24 -3	.222	.051
	5	9.514 -4	.006	.007	3.81 -3	.222	.038	0.	.000	.000	4.76 -3	.228	.045
	10	5.342 -4	.010	.004	2.41 -3	.236	.024	0.	.000	.000	2.94 -3	.245	.028
	15	2.516 -4	.012	.002	2.01 -3	.247	.013	0.	.000	.000	2.26 -3	.259	.015
	20	1.149 -4	.013	.001	1.13 -3	.256	.004	0.	.000	.000	1.25 -3	.268	.005
	25	5.178 -5	.013	.000	3.15 -4	.259	.001	0.	.000	.000	3.67 -4	.272	.002
	35	1.093 -5	.013	.000	2.50 -5	.260	.000	0.	.000	.000	3.59 -5	.273	.000
	50	1.327 -6	.013	.000	4.57 -7	.260	.000	0.	.000	.000	1.73 -6	.273	.000

Table 3.17. Parameters at 1.06 Microns

Met. Rge (km) V_n	Alt. (km) h	Rayleigh atten. coeff. (km^{-1}) β_r	Rayleigh optical thick. (0-h) τ_r	Rayleigh optical thick. (h-∞) τ'_r	Aerosol atten. coeff. (km^{-1}) β_p	Aerosol optical thick. (0-h) τ_p	Aerosol optical thick. (h-∞) τ'_p	Ozone absorp. coeff. (km^{-1}) β_3	Ozone optical thick. (0-h) τ_3	Ozone optical thick. (h-∞) τ'_3	Ext. coeff. (km^{-1}) β_{ext}	Ext. optical thick. (0-h) τ_{ext}	Ext. optical thick. (h-∞) τ'_{ext}
	0	8.192 -4	.000	.007	1.05 0	.000	.954	0.	.000	.000	1.05 0	.000	.961
	1	7.434 -4	.001	.006	3.36 -1	.625	.328	0.	.000	.000	3.37 -1	.626	.335
	2	6.731 -4	.001	.005	1.08 -1	.826	.127	0.	.000	.000	1.09 -1	.828	.133
	3	6.081 -4	.002	.005	3.47 -2	.891	.063	0.	.000	.000	3.54 -2	.893	.068
	4	5.480 -4	.003	.004	1.12 -2	.912	.042	0.	.000	.000	1.17 -2	.914	.046
	5	4.925 -4	.003	.004	3.59 -3	.918	.035	0.	.000	.000	4.08 -3	.922	.039
2	10	2.765 -4	.005	.002	2.27 -3	.931	.023	0.	.000	.000	2.54 -3	.936	.025
	15	1.407 -4	.006	.001	1.90 -3	.942	.012	0.	.000	.000	2.03 -3	.948	.013
	20	5.946 -5	.007	.000	1.07 -3	.950	.004	0.	.000	.000	1.13 -3	.956	.004
	25	2.681 -5	.007	.000	2.97 -4	.953	.001	0.	.000	.000	3.24 -4	.959	.001
	35	5.660 -6	.007	.000	2.35 -5	.954	.000	0.	.000	.000	2.92 -5	.961	.000
	50	6.867 -7	.007	.000	4.31 -7	.954	.000	0.	.000	.000	1.12 -6	.961	.000
	0	8.192 -4	.000	.007	6.95 -1	.000	.692	0.	.000	.000	6.96 -1	.000	.699
	1	7.434 -4	.001	.006	2.42 -1	.430	.262	0.	.000	.000	2.43 -1	.430	.268
	2	6.731 -4	.001	.005	8.45 -2	.580	.112	0.	.000	.000	8.52 -2	.581	.118
	3	6.081 -4	.002	.005	2.95 -2	.632	.060	0.	.000	.000	3.01 -2	.634	.065
	4	5.480 -4	.003	.004	1.03 -2	.650	.042	0.	.000	.000	1.08 -2	.653	.046
3	5	4.925 -4	.003	.004	3.59 -3	.656	.035	0.	.000	.000	4.08 -3	.660	.039
	10	2.765 -4	.005	.002	2.27 -3	.669	.023	0.	.000	.000	2.54 -3	.674	.025
	15	1.307 -4	.006	.001	1.90 -3	.680	.012	0.	.000	.000	2.03 -3	.686	.013
	20	5.946 -5	.007	.000	1.07 -3	.688	.004	0.	.000	.000	1.13 -3	.694	.004
	25	2.681 -5	.007	.000	2.97 -4	.651	.001	0.	.000	.000	3.24 -4	.697	.001
	35	5.660 -6	.007	.000	2.35 -5	.652	.000	0.	.000	.000	2.92 -5	.699	.000
	50	6.867 -7	.007	.000	4.31 -7	.692	.000	0.	.000	.000	1.12 -6	.699	.000
	0	8.192 -4	.000	.007	5.20 -1	.000	.554	0.	.000	.000	5.21 -1	.000	.561
	1	7.434 -4	.001	.006	1.92 -1	.329	.225	0.	.000	.000	1.93 -1	.330	.231
	2	6.731 -4	.001	.005	7.11 -2	.451	.103	0.	.000	.000	7.17 -2	.453	.109
	3	6.081 -4	.002	.005	2.63 -2	.496	.058	0.	.000	.000	2.69 -2	.498	.063
	4	5.480 -4	.003	.004	9.71 -3	.513	.042	0.	.000	.000	1.03 -2	.515	.046
4	5	4.925 -4	.003	.004	3.59 -3	.519	.035	0.	.000	.000	4.08 -3	.522	.039
	10	2.765 -4	.005	.002	2.27 -3	.532	.023	0.	.000	.000	2.54 -3	.537	.025
	15	1.407 -4	.006	.001	1.90 -3	.542	.012	0.	.000	.000	2.03 -3	.548	.013
	20	5.946 -5	.007	.000	1.07 -3	.550	.004	0.	.000	.000	1.13 -3	.557	.004
	25	2.681 -5	.007	.000	2.97 -4	.553	.001	0.	.000	.000	3.24 -4	.560	.001
	35	5.660 -6	.007	.000	2.35 -5	.554	.000	0.	.000	.000	2.92 -5	.561	.000
	50	6.867 -7	.007	.000	4.31 -7	.554	.000	0.	.000	.000	1.12 -6	.561	.000
	0	8.192 -4	.000	.007	4.14 -1	.000	.468	0.	.000	.000	4.15 -1	.000	.475
	1	7.434 -4	.001	.006	1.60 -1	.268	.200	0.	.000	.000	1.61 -1	.268	.207
	2	6.731 -4	.001	.005	6.20 -2	.371	.097	0.	.000	.000	6.27 -2	.373	.102
	3	6.081 -4	.002	.005	2.40 -2	.411	.057	0.	.000	.000	2.46 -2	.413	.062
	4	5.480 -4	.003	.004	9.28 -3	.427	.041	0.	.000	.000	9.83 -3	.429	.046
5	5	4.925 -4	.003	.004	3.59 -3	.433	.035	0.	.000	.000	4.08 -3	.436	.039
	10	2.765 -4	.005	.002	2.27 -3	.445	.023	0.	.000	.000	2.54 -3	.450	.025
	15	1.302 -4	.006	.001	1.90 -3	.456	.012	0.	.000	.000	2.03 -3	.462	.013
	20	5.946 -5	.007	.000	1.07 -3	.464	.004	0.	.000	.000	1.13 -3	.470	.004
	25	2.681 -5	.007	.000	2.97 -4	.467	.001	0.	.000	.000	3.24 -4	.474	.001
	35	5.660 -6	.007	.000	2.35 -5	.468	.000	0.	.000	.000	2.92 -5	.475	.000
	50	6.867 -7	.007	.000	4.31 -7	.468	.000	0.	.000	.000	1.12 -6	.475	.000

6	0	8.192 -4	.000	.007	3.45 -1	.000	.409	0.	.000	.000	3.45 -1	.000	.416
	1	7.434 -4	.001	.006	1.38 -1	.226	.183	0.	.000	.000	1.39 -1	.227	.189
	2	6.731 -4	.001	.005	5.55 -2	.317	.092	0.	.000	.000	5.62 -2	.318	.098
	3	6.081 -4	.002	.005	2.23 -2	.353	.056	0.	.000	.000	2.29 -2	.355	.061
	4	5.480 -4	.003	.004	8.94 -3	.368	.041	0.	.000	.000	9.49 -3	.370	.045
	5	4.925 -4	.003	.004	3.59 -3	.373	.035	0.	.000	.000	4.08 -3	.377	.039
	10	2.765 -4	.005	.002	2.27 -3	.386	.023	0.	.000	.000	2.54 -3	.391	.025
	15	1.302 -4	.006	.001	1.90 -3	.397	.012	0.	.000	.000	2.03 -3	.403	.013
	20	5.946 -5	.007	.000	1.07 -3	.405	.004	0.	.000	.000	1.13 -3	.411	.004
	25	2.681 -5	.007	.000	2.97 -4	.408	.001	0.	.000	.000	3.24 -4	.414	.001
	35	5.660 -6	.007	.000	2.35 -5	.409	.000	0.	.000	.000	2.92 -5	.416	.000
	50	6.867 -7	.007	.000	4.31 -7	.409	.000	0.	.000	.000	1.12 -6	.416	.000
8	0	8.192 -4	.000	.007	2.56 -1	.000	.331	0.	.000	.000	2.57 -1	.000	.338
	1	7.434 -4	.001	.006	1.09 -1	.172	.159	0.	.000	.000	1.10 -1	.173	.165
	2	6.731 -4	.001	.005	4.65 -2	.246	.086	0.	.000	.000	4.71 -2	.247	.091
	3	6.081 -4	.002	.005	1.98 -2	.277	.054	0.	.000	.000	2.04 -2	.279	.059
	4	5.480 -4	.003	.004	8.43 -3	.290	.041	0.	.000	.000	8.98 -3	.293	.045
	5	4.925 -4	.003	.004	3.59 -3	.296	.035	0.	.000	.000	4.08 -3	.299	.039
	10	2.765 -4	.005	.002	2.27 -3	.309	.023	0.	.000	.000	2.54 -3	.314	.025
	15	1.302 -4	.006	.001	1.90 -3	.319	.012	0.	.000	.000	2.03 -3	.325	.013
	20	5.946 -5	.007	.000	1.07 -3	.327	.004	0.	.000	.000	1.13 -3	.334	.004
	25	2.681 -5	.007	.000	2.97 -4	.330	.001	0.	.000	.000	3.24 -4	.337	.001
	35	5.660 -6	.007	.000	2.35 -5	.331	.000	0.	.000	.000	2.92 -5	.338	.000
	50	6.867 -7	.007	.000	4.31 -7	.331	.000	0.	.000	.000	1.12 -6	.338	.000
10	0	8.192 -4	.000	.007	2.04 -1	.000	.283	0.	.000	.000	2.05 -1	.000	.290
	1	7.434 -4	.001	.006	9.09 -2	.140	.144	0.	.000	.000	9.17 -2	.141	.150
	2	6.731 -4	.001	.005	4.05 -2	.202	.081	0.	.000	.000	4.12 -2	.204	.087
	3	6.081 -4	.002	.005	1.81 -2	.230	.053	0.	.000	.000	1.87 -2	.232	.058
	4	5.480 -4	.003	.004	8.05 -3	.243	.041	0.	.000	.000	8.60 -3	.245	.045
	5	4.925 -4	.003	.004	3.59 -3	.248	.035	0.	.000	.000	4.08 -3	.251	.039
	10	2.765 -4	.005	.002	2.27 -3	.261	.023	0.	.000	.000	2.54 -3	.266	.025
	15	1.302 -4	.006	.001	1.90 -3	.271	.012	0.	.000	.000	2.03 -3	.277	.013
	20	5.946 -5	.007	.000	1.07 -3	.279	.004	0.	.000	.000	1.13 -3	.286	.004
	25	2.681 -5	.007	.000	2.97 -4	.282	.001	0.	.000	.000	3.24 -4	.289	.001
	35	5.660 -6	.007	.000	2.35 -5	.283	.000	0.	.000	.000	2.92 -5	.290	.000
	50	6.867 -7	.007	.000	4.31 -7	.283	.000	0.	.000	.000	1.12 -6	.290	.000
13	0	8.192 -4	.000	.007	1.56 -1	.000	.237	0.	.000	.000	1.56 -1	.000	.244
	1	7.434 -4	.001	.006	7.32 -2	.109	.128	0.	.000	.000	7.43 -2	.110	.134
	2	6.731 -4	.001	.005	3.45 -2	.161	.076	0.	.000	.000	3.51 -2	.162	.082
	3	6.081 -4	.002	.005	1.62 -2	.185	.052	0.	.000	.000	1.68 -2	.187	.057
	4	5.480 -4	.003	.004	7.63 -3	.196	.041	0.	.000	.000	8.18 -3	.199	.045
	5	4.925 -4	.003	.004	3.59 -3	.202	.035	0.	.000	.000	4.08 -3	.205	.039
	10	2.765 -4	.005	.002	2.27 -3	.214	.023	0.	.000	.000	2.54 -3	.219	.025
	15	1.302 -4	.006	.001	1.90 -3	.225	.012	0.	.000	.000	2.03 -3	.231	.013
	20	5.946 -5	.007	.000	1.07 -3	.233	.004	0.	.000	.000	1.13 -3	.239	.004
	25	2.681 -5	.007	.000	2.97 -4	.236	.001	0.	.000	.000	3.24 -4	.243	.001
	35	5.660 -6	.007	.000	2.35 -5	.237	.000	0.	.000	.000	2.92 -5	.244	.000
	50	6.867 -7	.007	.000	4.31 -7	.237	.000	0.	.000	.000	1.12 -6	.244	.000

Table 3.18. Parameters at 1.26 Microns

Met. Rge (km) V_n	Alt. (km) h	Rayleigh atten. coeff. (km^{-1}) β_r	Rayleigh optical thick. (0-h) τ_r	Rayleigh optical thick. (h-∞) τ'_r	Aerosol atten. coeff. (km^{-1}) β_p	Aerosol optical thick. (0-h) τ_p	Aerosol optical thick. (h-∞) τ'_p	Ozone absorp. coeff. (km^{-1}) β_3	Ozone optical thick. (0-h) τ_3	Ozone optical thick. (h-∞) τ'_3	Ext. coeff. (km^{-1}) β_{ext}	Ext. optical thick. (0-h) τ_{ext}	Ext. optical thick. (h-∞) τ'_{ext}
2	0	4.091 -4	.000	.003	9.45 -1	.000	.872	0.	.000	.000	9.46 -1	.000	.876
	1	3.713 -4	.000	.003	3.07 -1	.568	.304	0.	.000	.000	3.08 -1	.568	.307
	2	3.362 -4	.001	.003	9.97 -2	.752	.120	0.	.000	.000	1.00 -1	.753	.122
	3	3.037 -4	.001	.002	3.25 -2	.812	.060	0.	.000	.000	3.28 -2	.813	.062
	4	2.737 -4	.001	.002	1.06 -2	.832	.040	0.	.000	.000	1.08 -2	.833	.042
	5	2.460 -4	.002	.002	3.43 -3	.838	.034	0.	.000	.000	3.68 -3	.840	.036
	10	1.381 -4	.003	.001	2.17 -3	.850	.022	0.	.000	.000	2.30 -3	.853	.023
	15	6.504 -5	.003	.000	1.81 -3	.860	.012	0.	.000	.000	1.88 -3	.863	.012
	20	2.969 -5	.003	.000	1.02 -3	.868	.004	0.	.000	.000	1.05 -3	.871	.004
	25	1.339 -5	.003	.000	2.84 -4	.871	.001	0.	.000	.000	2.97 -4	.874	.001
	35	2.827 -6	.003	.000	2.25 -5	.872	.000	0.	.000	.000	2.53 -5	.875	.000
	50	3.430 -7	.003	.000	4.11 -7	.872	.000	0.	.000	.000	7.54 -7	.876	.000
3	0	4.091 -4	.000	.003	6.28 -1	.000	.633	0.	.000	.000	6.29 -1	.000	.637
	1	3.713 -4	.000	.003	2.22 -1	.390	.243	0.	.000	.000	2.22 -1	.391	.246
	2	3.362 -4	.001	.003	7.82 -2	.528	.106	0.	.000	.000	7.85 -2	.529	.108
	3	3.037 -4	.001	.002	2.76 -2	.576	.057	0.	.000	.000	2.79 -2	.577	.059
	4	2.737 -4	.001	.002	9.73 -3	.593	.040	0.	.000	.000	1.00 -2	.595	.042
	5	2.460 -4	.002	.002	3.43 -3	.600	.034	0.	.000	.000	3.68 -3	.601	.036
	10	1.381 -4	.003	.001	2.17 -3	.612	.022	0.	.000	.000	2.30 -3	.614	.023
	15	6.506 -5	.003	.000	1.81 -3	.622	.012	0.	.000	.000	1.88 -3	.625	.012
	20	2.969 -5	.003	.000	1.02 -3	.629	.004	0.	.000	.000	1.05 -3	.633	.004
	25	1.339 -5	.003	.000	2.84 -4	.632	.001	0.	.000	.000	2.97 -4	.636	.001
	35	2.827 -6	.003	.000	2.25 -5	.633	.000	0.	.000	.000	2.53 -5	.637	.000
	50	3.430 -7	.003	.000	4.11 -7	.633	.000	0.	.000	.000	7.54 -7	.637	.000
4	0	4.091 -4	.000	.003	4.70 -1	.000	.508	0.	.000	.000	4.70 -1	.000	.511
	1	3.713 -4	.000	.003	1.76 -1	.299	.209	0.	.000	.000	1.76 -1	.299	.212
	2	3.362 -4	.001	.003	6.57 -2	.411	.097	0.	.000	.000	6.60 -2	.412	.100
	3	3.037 -4	.001	.002	2.46 -2	.453	.055	0.	.000	.000	2.49 -2	.454	.058
	4	2.737 -4	.001	.002	9.18 -3	.468	.040	0.	.000	.000	9.45 -3	.470	.042
	5	2.460 -4	.002	.002	3.43 -3	.474	.034	0.	.000	.000	3.68 -3	.476	.036
	10	1.381 -4	.003	.001	2.17 -3	.486	.022	0.	.000	.000	2.30 -3	.489	.023
	15	6.504 -5	.003	.000	1.81 -3	.496	.012	0.	.000	.000	1.88 -3	.499	.012
	20	2.969 -5	.003	.000	1.02 -3	.504	.004	0.	.000	.000	1.05 -3	.507	.004
	25	1.339 -5	.003	.000	2.84 -4	.507	.001	0.	.000	.000	2.97 -4	.510	.001
	35	2.827 -6	.003	.000	2.25 -5	.508	.000	0.	.000	.000	2.53 -5	.511	.000
	50	3.430 -7	.003	.000	4.11 -7	.508	.000	0.	.000	.000	7.54 -7	.511	.000
5	0	4.091 -4	.000	.003	3.75 -1	.000	.429	0.	.000	.000	3.75 -1	.000	.433
	1	3.713 -4	.000	.003	1.47 -1	.243	.186	0.	.000	.000	1.47 -1	.243	.189
	2	3.362 -4	.001	.003	5.73 -2	.338	.091	0.	.000	.000	5.77 -2	.339	.094
	3	3.037 -4	.001	.002	2.24 -2	.375	.054	0.	.000	.000	2.27 -2	.376	.056
	4	2.737 -4	.001	.002	8.77 -3	.390	.040	0.	.000	.000	9.05 -3	.391	.042
	5	2.460 -4	.002	.002	3.43 -3	.395	.034	0.	.000	.000	3.68 -3	.397	.036
	10	1.381 -4	.003	.001	2.17 -3	.407	.022	0.	.000	.000	2.30 -3	.410	.023
	15	6.506 -5	.003	.000	1.81 -3	.418	.012	0.	.000	.000	1.88 -3	.421	.012
	20	2.969 -5	.003	.000	1.02 -3	.425	.004	0.	.000	.000	1.05 -3	.429	.004
	25	1.339 -5	.003	.000	2.84 -4	.428	.001	0.	.000	.000	2.97 -4	.431	.001
	35	2.827 -6	.003	.000	2.25 -5	.429	.000	0.	.000	.000	2.53 -5	.433	.000
	50	3.430 -7	.003	.000	4.11 -7	.429	.000	0.	.000	.000	7.54 -7	.433	.000

6	0	4.091 -4	.000	.003	3.11 -1	.000	.375	0.	.300	.000	3.12 -1	.000	.379
	1	3.715 -4	.000	.003	1.26 -1	.205	.170	0.	.300	.000	1.27 -1	.206	.173
	2	3.362 -4	.001	.003	5.13 -2	.288	.087	0.	.300	.000	5.16 -2	.289	.090
	3	3.037 -4	.001	.002	2.08 -2	.322	.053	0.	.300	.000	2.11 -2	.323	.056
	4	2.737 -4	.001	.002	8.45 -3	.336	.039	0.	.300	.000	8.73 -3	.337	.042
	5	2.460 -4	.002	.002	3.43 -3	.342	.034	0.	.300	.000	3.68 -3	.343	.036
	10	1.381 -4	.003	.001	2.17 -3	.354	.022	0.	.300	.000	2.30 -3	.356	.023
	15	6.504 -5	.003	.000	1.81 -3	.364	.012	0.	.300	.000	1.88 -3	.367	.012
	20	2.969 -5	.003	.000	1.02 -3	.371	.004	0.	.300	.000	1.05 -3	.375	.004
	25	1.339 -5	.003	.000	2.84 -4	.374	.001	0.	.300	.000	2.97 -4	.378	.001
	35	2.827 -6	.003	.000	2.25 -5	.375	.000	0.	.300	.000	2.53 -5	.379	.000
	50	3.430 -7	.003	.000	4.11 -7	.375	.000	0.	.300	.000	7.54 -7	.379	.000
	0	4.091 -4	.000	.003	2.32 -1	.000	.305	0.	.300	.000	2.32 -1	.000	.308
	1	3.715 -4	.000	.003	9.97 -2	.157	.148	0.	.300	.000	1.00 -1	.157	.151
	2	3.362 -4	.001	.003	4.30 -2	.224	.081	0.	.300	.000	4.33 -2	.225	.083
	3	3.037 -4	.001	.002	1.85 -2	.253	.052	0.	.300	.000	1.88 -2	.254	.054
	4	2.737 -4	.001	.002	7.97 -3	.265	.039	0.	.300	.000	8.24 -3	.267	.041
	5	2.460 -4	.002	.002	3.43 -3	.271	.034	0.	.300	.000	3.68 -3	.272	.036
	10	1.381 -4	.003	.001	2.17 -3	.283	.022	0.	.300	.000	2.30 -3	.285	.023
	15	6.504 -5	.003	.000	1.81 -3	.293	.012	0.	.300	.000	1.88 -3	.296	.012
	20	2.969 -5	.003	.000	1.02 -3	.301	.004	0.	.300	.000	1.05 -3	.304	.004
	25	1.339 -5	.003	.000	2.84 -4	.303	.001	0.	.300	.000	2.97 -4	.307	.001
	35	2.827 -6	.003	.000	2.25 -5	.305	.000	0.	.300	.000	2.53 -5	.308	.000
	50	3.430 -7	.003	.000	4.11 -7	.305	.000	0.	.300	.000	7.54 -7	.308	.000
10	0	4.091 -4	.000	.003	1.84 -1	.000	.261	0.	.300	.000	1.85 -1	.000	.264
	1	3.715 -4	.000	.003	8.31 -2	.127	.134	0.	.300	.000	8.35 -2	.127	.137
	2	3.362 -4	.001	.003	3.75 -2	.184	.077	0.	.300	.00	3. -2	.185	.079
	3	3.037 -4	.001	.002	1.69 -2	.210	.051	0.	.300	.000	1. -2	.211	.053
	4	2.737 -4	.001	.002	7.61 -3	.222	.039	0.	.300	.000	7.89 -3	.223	.041
	5	2.460 -4	.002	.002	3.43 -3	.227	.034	0.	.300	.000	3.68 -3	.229	.036
	10	1.381 -4	.003	.001	2.17 -3	.239	.022	0.	.300	.000	2.30 -3	.242	.023
	15	6.504 -5	.003	.000	1.81 -3	.249	.012	0.	.300	.000	1.88 -3	.252	.012
	20	2.969 -5	.003	.000	1.02 -3	.257	.004	0.	.300	.000	1.05 -3	.260	.004
	25	1.339 -5	.003	.000	2.84 -4	.260	.001	0.	.300	.000	2.97 -4	.263	.001
	35	2.827 -6	.003	.000	2.25 -5	.261	.000	0.	.300	.000	2.53 -5	.264	.000
	50	3.430 -7	.003	.000	4.11 -7	.261	.000	0.	.300	.000	7.54 -7	.264	.000
13	0	4.091 -4	.000	.003	1.41 -1	.000	.219	0.	.300	.000	1.41 -1	.000	.222
	1	3.715 -4	.000	.003	6.69 -2	.099	.119	0.	.300	.000	6.73 -2	.100	.122
	2	3.362 -4	.001	.003	3.18 -2	.146	.072	0.	.300	.000	3.22 -2	.147	.075
	3	3.037 -4	.001	.002	1.52 -2	.169	.050	0.	.300	.000	1.55 -2	.170	.052
	4	2.737 -4	.001	.002	7.21 -3	.180	.039	0.	.300	.000	7.48 -3	.181	.041
	5	2.460 -4	.002	.002	3.43 -3	.185	.034	0.	.300	.000	3.69 -3	.186	.036
	10	1.381 -4	.003	.001	2.17 -3	.197	.022	0.	.300	.000	2.30 -3	.199	.023
	15	6.504 -5	.003	.000	1.81 -3	.207	.012	0.	.300	.000	1.88 -3	.210	.012
	20	2.969 -5	.003	.000	1.02 -3	.215	.004	0.	.300	.000	1.05 -3	.218	.004
	25	1.339 -5	.003	.000	2.84 -4	.217	.001	0.	.300	.000	2.97 -4	.221	.001
	35	2.827 -6	.003	.000	2.25 -5	.218	.000	0.	.300	.000	2.53 -5	.222	.000
	50	3.430 -7	.003	.000	4.11 -7	.219	.000	0.	.300	.000	7.54 -7	.222	.000

Table 3.13. Parameters at 1.57 Microns

Met Mdl	Alt (km)	Rayleigh atten coeff (km^{-1})	Rayleigh optical thick	Rayleigh optical thick	Aerosol atten coeff (km^{-1})	Aerosol optical thick	Aerosol optical thick	Cloud atten coeff (km^{-1})	Cloud optical thick	Cloud optical thick	Ext coeff (km^{-1})	Ext optical thick	Ext optical thick
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

	0	1.372 -4	.000	.001	2.05 -1	.555	.325	0.	[illegible]	[illegible]	2.05 -1	.301	[illegible]
	1	1.199 -4	.000	.001	1.44 -1	.136	.151	0.	[illegible]	[illegible]	[illegible] -1	.136	[illegible]
	2	1.066 -4	.000	.001	[illegible] -2	.266	.076	0.	[illegible]	[illegible]	[illegible] -2	.264	.174
	3	9.810 -5	.000	.001	1.84 -2	.277	.068	0.	[illegible]	[illegible]	[illegible] -2	.279	[illegible]
	4	8.441 -5	.000	.001	7.57 -3	.290	.036	0.	[illegible]	[illegible]	7.[illegible] -3	.298	[illegible]
5	5	7.966 -5	.001	.001	3.11 -3	.295	.034	0.	[illegible]	[illegible]	3.19 -3	.295	[illegible]
	10	5.467 -5	.001	.000	1.97 -3	.306	.025	0.	[illegible]	[illegible]	2.[illegible] -3	.306	[illegible]
	15	2.101 -5	.001	.000	1.06 -3	.315	.011	0.	[illegible]	[illegible]	[illegible] -3	.315	[illegible]
	20	9.593 -6	.001	.000	9.26 -4	.322	.006	0.	[illegible]	[illegible]	[illegible] -4	.323	[illegible]
	25	4.375 -6	.001	.000	2.57 -4	.324	.003	0.	[illegible]	[illegible]	[illegible] -4	.325	[illegible]
	[illegible]	9.132 -7	.001	.000	2.04 -5	.325	.001	0.	[illegible]	[illegible]	2.13 -5	.326	[illegible]
	[illegible]	1.108 -7	.001	.000	3.73 -7	.325	.000	0.	[illegible]	[illegible]	[illegible] -7	.325	[illegible]
	0	1.372 -4	.000	.001	1.97 -1	.600	.295	0.	[illegible]	[illegible]	[illegible] -1	.302	.254
	1	1.199 -4	.000	.001	8.60 -2	.196	.131	0.	[illegible]	[illegible]	[illegible] -2	.134	.132
	2	1.066 -4	.000	.001	3.75 -2	.192	.072	0.	[illegible]	[illegible]	3.[illegible] -2	.193	[illegible]
	3	9.810 -5	.000	.001	1.[illegible] -2	.218	.047	0.	[illegible]	[illegible]	[illegible] -2	.218	[illegible]
	4	8.441 -5	.000	.001	7.14 -3	.224	.036	0.	[illegible]	[illegible]	7.23 -3	.224	[illegible]
8	5	7.966 -5	.001	.001	3.[illegible] -3	.234	.031	0.	[illegible]	[illegible]	[illegible] -3	.234	[illegible]
	10	5.467 -5	.001	.000	1.97 -3	.245	.025	0.	[illegible]	[illegible]	2.[illegible] -3	.246	[illegible]
	15	2.101 -5	.001	.000	1.06 -3	.256	.011	0.	[illegible]	[illegible]	[illegible] -3	.255	[illegible]
	20	9.593 -6	.001	.000	9.26 -4	.261	.006	0.	[illegible]	[illegible]	[illegible] -4	.262	[illegible]
	25	4.375 -6	.001	.000	2.57 -4	.263	.004	0.	[illegible]	[illegible]	2.[illegible] -4	.265	[illegible]
	[illegible]	9.132 -7	.001	.000	2.04 -5	.264	.000	0.	[illegible]	[illegible]	2.13 -5	.266	[illegible]
	[illegible]	1.108 -7	.001	.000	3.73 -7	.265	.000	0.	[illegible]	[illegible]	[illegible] -7	.266	[illegible]
	0	1.372 -4	.000	.001	1.57 -1	.666	.227	0.	[illegible]	[illegible]	1.57 -1	.305	.229
	1	1.199 -4	.000	.001	7.17 -2	.139	.118	0.	[illegible]	[illegible]	7.[illegible] -2	.139	[illegible]
	2	1.066 -4	.000	.001	3.27 -2	.156	.068	0.	[illegible]	[illegible]	3.29 -2	.159	.069
	3	9.810 -5	.000	.001	1.69 -2	.181	.046	0.	[illegible]	[illegible]	[illegible] -2	.181	.047
	4	8.441 -5	.000	.001	6.62 -3	.191	.035	0.	[illegible]	[illegible]	[illegible] -3	.192	.036
10	5	7.966 -5	.001	.001	3.11 -3	.196	.031	0.	[illegible]	[illegible]	3.[illegible] -3	.197	[illegible]
	10	5.467 -5	.001	.000	1.97 -3	.257	.025	0.	[illegible]	[illegible]	2.[illegible] -3	.210	[illegible]
	15	2.101 -5	.001	.000	1.06 -3	.216	.011	0.	[illegible]	[illegible]	1.06 -3	.217	[illegible]
	20	9.593 -6	.001	.000	9.26 -4	.223	.006	0.	[illegible]	[illegible]	[illegible] -4	.224	[illegible]
	25	4.375 -6	.001	.000	2.57 -4	.226	.001	0.	[illegible]	[illegible]	2.[illegible] -4	.227	[illegible]
	[illegible]	9.132 -7	.001	.000	2.04 -5	.227	.000	0.	[illegible]	[illegible]	[illegible] -5	.225	[illegible]
	[illegible]	1.108 -7	.001	.000	3.73 -7	.227	.000	0.	[illegible]	[illegible]	[illegible] -7	.228	[illegible]
	0	1.372 -4	.000	.001	1.22 -1	[illegible]	.190	0.	[illegible]	[illegible]	[illegible] -1	.303	.192
	1	1.199 -4	.000	.001	5.77 -2	.085	.135	0.	[illegible]	[illegible]	[illegible] -2	.305	.136
	2	1.066 -4	.000	.001	2.76 -2	.126	.065	0.	[illegible]	[illegible]	2.[illegible] -2	.126	.065
	3	9.810 -5	.000	.001	1.34 -2	.146	.045	0.	[illegible]	[illegible]	[illegible] -2	.146	[illegible]
	4	8.441 -5	.000	.001	[illegible] -3	.155	.035	0.	[illegible]	[illegible]	[illegible] -3	.156	[illegible]
13	5	7.966 -5	.001	.001	3.11 -3	.156	.031	0.	[illegible]	[illegible]	[illegible] -3	.160	[illegible]
	10	5.467 -5	.001	.000	1.97 -3	.171	.025	0.	[illegible]	[illegible]	[illegible] -4	.171	[illegible]
	15	2.101 -5	.001	.000	[illegible] -3	.184	.011	0.	[illegible]	[illegible]	[illegible] -3	.184	[illegible]
	20	9.593 -6	.001	.000	9.26 -4	.187	.006	0.	[illegible]	[illegible]	[illegible] -4	.188	[illegible]
	25	4.375 -6	.001	.000	2.57 -4	.189	.001	0.	[illegible]	[illegible]	[illegible] -4	.192	[illegible]
	[illegible]	9.132 -7	.001	.000	2.04 -5	.190	.000	0.	[illegible]	[illegible]	2.13 -5	.191	[illegible]
	[illegible]	1.108 -7	.001	.000	3.73 -7	.192	.000	0.	[illegible]	[illegible]	[illegible] -7	.192	[illegible]

Table 3.20. Parameters at 2.17 Microns

Met. Rge (km) V_r	Alt. (km) h	Rayleigh atten. coeff. (km^{-1}) β_r	Rayleigh optical thick. (0-h) τ_r	Rayleigh optical thick. (h-∞) τ_r'	Aerosol atten. coeff. (km^{-1}) β_p	Aerosol optical thick. (0-h) τ_p	Aerosol optical thick. (h-∞) τ_p'	Ozone absorp. coeff. (km^{-1}) β_{oz}	Ozone optical thick. (0-h) τ_{oz}	Ozone optical thick. (h-∞) τ_{oz}'	Ext. coeff. (km^{-1}) β_{ext}	Ext. optical thick. (0-h) τ_{ext}	Ext. optical thick. (h-∞) τ_{ext}'
2	0	4.679 -5	.003	.003	7.24 -1	.006	.672	0.	.330	.333	7.24 -1	.333	.672
	1	4.700 -5	.003	.003	2.37 -1	.436	.236	0.	.330	.333	2.37 -1	.436	.236
	2	3.803 -5	.003	.003	7.74 -2	.578	.095	0.	.330	.300	7.74 -2	.578	.294
	3	3.436 -5	.003	.000	2.53 -2	.625	.047	0.	.330	.066	2.53 -2	.625	.347
	4	3.098 -5	.003	.330	8.26 -3	.640	.032	0.	.330	.003	8.27 -3	.646	.332
	5	2.785 -5	.000	.000	2.70 -3	.645	.027	0.	.330	.333	2.73 -3	.645	.327
	10	1.562 -5	.003	.000	1.71 -3	.655	.017	0.	.330	.303	1.72 -3	.655	.317
	15	7.459 -6	.000	.030	1.43 -3	.662	.009	0.	.330	.333	1.43 -3	.663	.309
	20	3.459 -6	.300	.000	8.02 -4	.669	.003	0.	.330	.333	8.25 -4	.664	.333
	25	1.515 -6	.000	.030	2.23 -4	.671	.001	0.	.330	.333	2.25 -4	.671	.331
	35	3.198 -7	.000	.000	1.77 -5	.672	.000	0.	.330	.335	1.81 -5	.672	.330
	50	3.880 -8	.000	.000	3.24 -7	.672	.000	0.	.333	.333	3.43 -7	.672	.333
3	0	4.679 -5	.000	.000	4.81 -1	.000	.488	0.	.330	.333	4.81 -1	.333	.488
	1	4.700 -5	.000	.000	1.71 -1	.300	.199	0.	.339	.333	1.71 -1	.300	.199
	2	3.803 -5	.000	.000	6.05 -2	.406	.082	0.	.337	.363	6.26 -2	.406	.083
	3	3.436 -5	.000	.000	2.15 -2	.443	.045	0.	.333	.333	2.15 -2	.444	.045
	4	3.098 -5	.000	.000	7.61 -3	.457	.031	0.	.333	.305	7.65 -3	.457	.032
	5	2.785 -5	.000	.000	2.70 -3	.462	.027	0.	.333	.398	2.75 -3	.462	.027
	10	1.562 -5	.000	.000	1.71 -3	.471	.017	0.	.333	.353	1.72 -3	.471	.017
	15	7.459 -6	.000	.000	1.43 -3	.479	.009	0.	.330	.305	1.43 -3	.479	.309
	20	3.459 -6	.000	.000	8.02 -4	.485	.003	0.	.330	.303	8.25 -4	.485	.303
	25	1.515 -6	.000	.000	2.23 -4	.487	.001	0.	.333	.303	2.25 -4	.488	.301
	35	3.198 -7	.000	.000	1.77 -5	.488	.000	0.	.333	.364	1.83 -5	.489	.300
	50	3.880 -8	.000	.000	3.24 -7	.488	.000	0.	.330	.363	3.53 -7	.489	.300
4	0	4.679 -5	.000	.003	3.60 -1	.000	.392	0.	.330	.350	3.60 -1	.000	.392
	1	4.700 -5	.000	.000	1.35 -1	.230	.162	0.	.333	.355	1.35 -1	.230	.162
	2	3.803 -5	.000	.000	5.09 -2	.316	.076	0.	.330	.397	5.30 -2	.316	.076
	3	3.436 -5	.000	.030	1.91 -2	.348	.045	0.	.308	.033	1.92 -2	.348	.344
	4	3.098 -5	.000	.030	7.19 -3	.361	.031	0.	.383	.305	7.27 -3	.361	.331
	5	2.785 -5	.000	.000	2.70 -3	.365	.027	0.	.330	.396	2.73 -3	.365	.327
	10	1.567 -5	.000	.000	1.71 -3	.375	.017	0.	.330	.305	1.72 -3	.375	.317
	15	7.459 -6	.000	.000	1.43 -3	.382	.009	0.	.333	.305	1.43 -3	.383	.309
	20	3.459 -6	.000	.000	8.02 -4	.389	.003	0.	.333	.355	8.25 -4	.389	.303
	25	1.515 -6	.000	.000	2.23 -4	.391	.001	0.	.330	.393	2.25 -4	.391	.301
	35	3.198 -7	.000	.000	1.77 -5	.392	.000	0.	.330	.303	1.83 -5	.392	.300
	50	3.880 -8	.000	.000	3.24 -7	.392	.000	0.	.332	.303	3.43 -7	.392	.300
5	0	4.679 -5	.000	.003	2.07 -1	.000	.331	0.	.330	.303	2.07 -1	.000	.337
	1	4.700 -5	.000	.000	1.13 -1	.147	.145	0.	.330	.333	1.13 -1	.147	.145
	2	3.803 -5	.000	.000	4.44 -2	.260	.071	0.	.333	.303	4.44 -2	.263	.372
	3	3.436 -5	.000	.000	1.75 -2	.289	.042	0.	.333	.333	1.75 -2	.289	.343
	4	3.098 -5	.000	.000	6.87 -3	.300	.031	0.	.330	.303	6.94 -3	.300	.331
	5	2.785 -5	.000	.000	2.70 -3	.305	.027	0.	.330	.333	2.73 -3	.305	.327
	10	1.562 -5	.000	.000	1.71 -3	.314	.017	0.	.339	.333	1.77 -3	.314	.317
	15	7.459 -6	.000	.000	1.43 -3	.322	.009	0.	.330	.333	1.43 -3	.322	.309
	20	3.459 -6	.000	.000	8.02 -4	.326	.005	0.	.333	.333	8.25 -4	.329	.303
	25	1.515 -6	.000	.000	2.23 -4	.330	.001	0.	.330	.333	2.25 -4	.331	.301
	35	3.198 -7	.000	.000	1.77 -5	.331	.000	0.	.330	.333	1.83 -5	.332	.300
	50	3.880 -8	.000	.000	3.24 -7	.331	.000	0.	.330	.333	3.43 -7	.332	.300

6	0	4.629 -5	.000	.000	2.39 -1	.000	.290	0.	.000	.000	2.39 -1	.000	.290
	1	4.200 -5	.000	.000	9.73 -2	.158	.132	0.	.000	.000	9.76 -2	.158	.133
	2	3.803 -5	.000	.000	3.97 -2	.222	.068	0.	.000	.000	3.98 -2	.222	.069
	3	3.436 -5	.000	.000	1.62 -2	.246	.042	0.	.000	.000	1.62 -2	.244	.042
	4	3.096 -5	.000	.000	6.62 -3	.259	.031	0.	.000	.000	6.65 -3	.259	.031
	5	2.783 -5	.000	.000	2.70 -3	.263	.027	0.	.000	.000	2.73 -3	.263	.027
	10	1.562 -5	.000	.000	1.71 -3	.273	.017	0.	.000	.000	1.72 -3	.273	.017
	15	7.359 -6	.000	.000	1.43 -3	.280	.009	0.	.000	.000	1.43 -3	.281	.009
	20	3.359 -6	.000	.000	8.02 -4	.287	.003	0.	.000	.000	8.35 -4	.287	.003
	25	1.515 -6	.000	.000	2.23 -4	.289	.001	0.	.000	.000	2.25 -4	.289	.001
	35	3.198 -7	.000	.000	1.77 -5	.290	.000	0.	.000	.000	1.83 -5	.290	.000
	50	3.880 -8	.000	.000	3.24 -7	.290	.000	0.	.000	.000	3.63 -7	.290	.000
8	0	4.629 -5	.000	.000	1.77 -1	.000	.235	0.	.000	.000	1.77 -1	.000	.236
	1	4.200 -5	.000	.000	7.68 -2	.120	.115	0.	.000	.000	7.69 -2	.129	.115
	2	3.803 -5	.000	.000	3.33 -2	.172	.063	0.	.000	.000	3.33 -2	.172	.063
	3	3.436 -5	.000	.000	1.44 -2	.195	.041	0.	.000	.000	1.44 -2	.195	.041
	4	3.096 -5	.000	.000	6.24 -3	.204	.031	0.	.000	.000	6.27 -3	.205	.031
	5	2.783 -5	.000	.000	2.70 -3	.209	.027	0.	.000	.000	2.73 -3	.209	.027
	10	1.562 -5	.000	.000	1.71 -3	.218	.017	0.	.000	.000	1.72 -3	.218	.017
	15	7.359 -6	.000	.000	1.43 -3	.226	.009	0.	.000	.000	1.43 -3	.226	.009
	20	3.359 -6	.000	.000	8.02 -4	.232	.003	0.	.000	.000	8.95 -4	.233	.003
	25	1.515 -6	.000	.000	2.23 -4	.234	.001	0.	.000	.000	2.25 -4	.235	.001
	35	3.198 -7	.000	.000	1.77 -5	.235	.000	0.	.000	.000	1.86 -5	.236	.000
	50	3.880 -8	.000	.000	3.24 -7	.235	.000	0.	.000	.000	3.63 -7	.236	.000
10	0	4.629 -5	.000	.000	1.41 -1	.000	.202	0.	.000	.000	1.41 -1	.000	.202
	1	4.200 -5	.000	.000	6.40 -2	.098	.104	0.	.000	.000	6.41 -2	.098	.104
	2	3.803 -5	.000	.000	2.90 -2	.142	.060	0.	.000	.000	2.90 -2	.142	.060
	3	3.436 -5	.000	.000	1.31 -2	.162	.040	0.	.000	.000	1.32 -2	.162	.040
	4	3.096 -5	.000	.000	5.96 -3	.171	.031	0.	.000	.000	5.99 -3	.171	.031
	5	2.783 -5	.000	.000	2.70 -3	.175	.027	0.	.000	.000	2.73 -3	.175	.027
	10	1.562 -5	.000	.000	1.71 -3	.185	.017	0.	.000	.000	1.72 -3	.185	.017
	15	7.359 -6	.000	.000	1.43 -3	.192	.009	0.	.000	.000	1.43 -3	.193	.009
	20	3.359 -6	.000	.000	8.02 -4	.199	.003	0.	.000	.000	8.95 -4	.199	.003
	25	1.515 -6	.000	.000	2.23 -4	.201	.001	0.	.000	.000	2.25 -4	.201	.001
	35	3.198 -7	.000	.000	1.77 -5	.202	.000	0.	.000	.000	1.80 -5	.202	.000
	50	3.880 -8	.000	.000	3.24 -7	.202	.000	0.	.000	.000	3.63 -7	.202	.000
13	0	4.629 -5	.000	.000	1.08 -1	.000	.169	0.	.000	.000	1.08 -1	.000	.169
	1	4.200 -5	.000	.000	5.15 -2	.076	.093	0.	.000	.000	5.16 -2	.076	.093
	2	3.803 -5	.000	.000	2.47 -2	.113	.056	0.	.000	.000	2.47 -2	.113	.057
	3	3.436 -5	.000	.000	1.18 -2	.130	.039	0.	.000	.000	1.18 -2	.130	.039
	4	3.096 -5	.000	.000	5.64 -3	.138	.031	0.	.000	.000	5.68 -3	.139	.031
	5	2.783 -5	.000	.000	2.70 -3	.142	.027	0.	.000	.000	2.73 -3	.143	.027
	10	1.562 -5	.000	.000	1.71 -3	.152	.017	0.	.000	.000	1.72 -3	.152	.017
	15	7.359 -6	.000	.000	1.43 -3	.160	.009	0.	.000	.000	1.43 -3	.160	.009
	20	3.359 -6	.000	.000	8.02 -4	.166	.003	0.	.000	.000	8.95 -4	.166	.003
	25	1.515 -6	.000	.000	2.23 -4	.168	.001	0.	.000	.000	2.25 -4	.169	.001
	35	3.198 -7	.000	.000	1.77 -5	.169	.000	0.	.000	.000	1.83 -5	.169	.000
	50	3.880 -8	.000	.000	3.24 -7	.169	.000	0.	.000	.000	3.63 -7	.169	.000

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13. ABSTRACT

An examination of the haze regime shows that: (1) the aerosol properties of a surface meteorological range generally affect a mixing layer to 5 km altitude, and (2) the lower and upper visibility limits of a haze regime are defined by meteorological ranges 1.2 km and 15 km respectively. Within these limits eight meteorological ranges are selected for developing uv, visible, and ir aerosol attenuation coefficients. An aerosol scale height is derived for each meteorological range. Finally, the computed aerosol attenuation coefficients are presented as tabulations which include previously published attenuation parameters (aerosols, molecules and ozone) to 50 km altitude.

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